

Lab Sample ID	Client Sample ID	Matrix	Sample Type	Collection Date	Percent Moisture	Analysis Method	Dilution Factor
180-33599-7	H-SW-01	Solid		06/03/2014 10:44		6010C	1
180-33599-7	H-SW-01	Solid		06/03/2014 10:44		6010C	1
180-33599-7	H-SW-01	Solid		06/03/2014 10:44		6010C	1
180-33599-7	H-SW-01	Solid		06/03/2014 10:44		6010C	1
180-33599-7	H-SW-01	Solid		06/03/2014 10:44		6010C	1
180-33599-7	H-SW-01	Solid		06/03/2014 10:44		6010C	1
180-33599-7	H-SW-01	Solid		06/03/2014 10:44		6010C	1
180-33599-7	H-SW-01	Solid		06/03/2014 10:44		7470A	1
180-33599-8	H-SW-02	Solid		06/03/2014 11:01		6010C	1
180-33599-8	H-SW-02	Solid		06/03/2014 11:01		6010C	1
180-33599-8	H-SW-02	Solid		06/03/2014 11:01		6010C	1
180-33599-8	H-SW-02	Solid		06/03/2014 11:01		6010C	1
180-33599-8	H-SW-02	Solid		06/03/2014 11:01		6010C	1
180-33599-8	H-SW-02	Solid		06/03/2014 11:01		6010C	1
180-33599-8	H-SW-02	Solid		06/03/2014 11:01		6010C	1
180-33599-8	H-SW-02	Solid		06/03/2014 11:01		7470A	1
180-33599-9	H-SW-03	Solid		06/03/2014 11:36		6010C	1
180-33599-9	H-SW-03	Solid		06/03/2014 11:36		6010C	1
180-33599-9	H-SW-03	Solid		06/03/2014 11:36		6010C	1
180-33599-9	H-SW-03	Solid		06/03/2014 11:36		6010C	1
180-33599-9	H-SW-03	Solid		06/03/2014 11:36		6010C	1
180-33599-9	H-SW-03	Solid		06/03/2014 11:36		6010C	1
180-33599-9	H-SW-03	Solid		06/03/2014 11:36		7470A	1
180-33599-10	H-SW-04	Solid		06/03/2014 11:20		6010C	1
180-33599-10	H-SW-04	Solid		06/03/2014 11:20		6010C	1
180-33599-10	H-SW-04	Solid		06/03/2014 11:20		6010C	1
180-33599-10	H-SW-04	Solid		06/03/2014 11:20		6010C	1
180-33599-10	H-SW-04	Solid		06/03/2014 11:20		6010C	1
180-33599-10	H-SW-04	Solid		06/03/2014 11:20		6010C	1
180-33599-10	H-SW-04	Solid		06/03/2014 11:20		6010C	1
180-33599-10	H-SW-04	Solid		06/03/2014 11:20		7470A	1
180-33599-12	H-SW-05	Solid		06/03/2014 11:26		6010C	1

180-33599-12	H-SW-05	Solid	06/03/2014 11:26	6010C	1
180-33599-12	H-SW-05	Solid	06/03/2014 11:26	6010C	1
180-33599-12	H-SW-05	Solid	06/03/2014 11:26	6010C	1
180-33599-12	H-SW-05	Solid	06/03/2014 11:26	6010C	1
180-33599-12	H-SW-05	Solid	06/03/2014 11:26	6010C	1
180-33599-12	H-SW-05	Solid	06/03/2014 11:26	6010C	1
180-33599-12	H-SW-05	Solid	06/03/2014 11:26	7470A	1
180-33599-13	H-SW-06	Solid	06/03/2014 11:29	6010C	1
180-33599-13	H-SW-06	Solid	06/03/2014 11:29	6010C	1
180-33599-13	H-SW-06	Solid	06/03/2014 11:29	6010C	1
180-33599-13	H-SW-06	Solid	06/03/2014 11:29	6010C	1
180-33599-13	H-SW-06	Solid	06/03/2014 11:29	6010C	1
180-33599-13	H-SW-06	Solid	06/03/2014 11:29	6010C	1
180-33599-13	H-SW-06	Solid	06/03/2014 11:29	6010C	1
180-33599-13	H-SW-06	Solid	06/03/2014 11:29	7470A	1
180-33599-14	H-SW-07	Solid	06/03/2014 13:47	6010C	1
180-33599-14	H-SW-07	Solid	06/03/2014 13:47	6010C	1
180-33599-14	H-SW-07	Solid	06/03/2014 13:47	6010C	1
180-33599-14	H-SW-07	Solid	06/03/2014 13:47	6010C	1
180-33599-14	H-SW-07	Solid	06/03/2014 13:47	6010C	1
180-33599-14	H-SW-07	Solid	06/03/2014 13:47	6010C	1
180-33599-14	H-SW-07	Solid	06/03/2014 13:47	6010C	1
180-33599-14	H-SW-07	Solid	06/03/2014 13:47	7470A	1
180-33599-1	H-SW-08	Solid	06/03/2014 13:50	6010C	1
180-33599-1	H-SW-08	Solid	06/03/2014 13:50	6010C	1
180-33599-1	H-SW-08	Solid	06/03/2014 13:50	6010C	1
180-33599-1	H-SW-08	Solid	06/03/2014 13:50	6010C	1
180-33599-1	H-SW-08	Solid	06/03/2014 13:50	6010C	1
180-33599-1	H-SW-08	Solid	06/03/2014 13:50	6010C	1
180-33599-1	H-SW-08	Solid	06/03/2014 13:50	6010C	1
180-33599-1	H-SW-08	Solid	06/03/2014 13:50	7470A	1
180-33599-2	H-SW-09	Solid	06/03/2014 13:55	6010C	1
180-33599-2	H-SW-09	Solid	06/03/2014 13:55	6010C	1
180-33599-2	H-SW-09	Solid	06/03/2014 13:55	6010C	1

180-33599-2	H-SW-09	Solid	06/03/2014 13:55	6010C	1
180-33599-2	H-SW-09	Solid	06/03/2014 13:55	6010C	1
180-33599-2	H-SW-09	Solid	06/03/2014 13:55	6010C	1
180-33599-2	H-SW-09	Solid	06/03/2014 13:55	6010C	1
180-33599-2	H-SW-09	Solid	06/03/2014 13:55	7470A	1
180-33599-11	H-SW-10	Solid	06/03/2014 11:24	6010C	1
180-33599-11	H-SW-10	Solid	06/03/2014 11:24	6010C	1
180-33599-11	H-SW-10	Solid	06/03/2014 11:24	6010C	1
180-33599-11	H-SW-10	Solid	06/03/2014 11:24	6010C	1
180-33599-11	H-SW-10	Solid	06/03/2014 11:24	6010C	1
180-33599-11	H-SW-10	Solid	06/03/2014 11:24	6010C	1
180-33599-11	H-SW-10	Solid	06/03/2014 11:24	6010C	1
180-33599-11	H-SW-10	Solid	06/03/2014 11:24	7470A	1
180-33599-3	H-SW-11	Solid	06/03/2014 13:59	6010C	1
180-33599-3	H-SW-11	Solid	06/03/2014 13:59	6010C	1
180-33599-3	H-SW-11	Solid	06/03/2014 13:59	6010C	1
180-33599-3	H-SW-11	Solid	06/03/2014 13:59	6010C	1
180-33599-3	H-SW-11	Solid	06/03/2014 13:59	6010C	1
180-33599-3	H-SW-11	Solid	06/03/2014 13:59	6010C	1
180-33599-3	H-SW-11	Solid	06/03/2014 13:59	6010C	1
180-33599-3	H-SW-11	Solid	06/03/2014 13:59	7470A	1
180-33599-5	H-SW-12	Solid	06/03/2014 14:05	6010C	1
180-33599-5	H-SW-12	Solid	06/03/2014 14:05	6010C	1
180-33599-5	H-SW-12	Solid	06/03/2014 14:05	6010C	1
180-33599-5	H-SW-12	Solid	06/03/2014 14:05	6010C	1
180-33599-5	H-SW-12	Solid	06/03/2014 14:05	6010C	1
180-33599-5	H-SW-12	Solid	06/03/2014 14:05	6010C	1
180-33599-5	H-SW-12	Solid	06/03/2014 14:05	7470A	1
180-33599-4	H-SW-13	Solid	06/03/2014 14:10	6010C	1
180-33599-4	H-SW-13	Solid	06/03/2014 14:10	6010C	1
180-33599-4	H-SW-13	Solid	06/03/2014 14:10	6010C	1
180-33599-4	H-SW-13	Solid	06/03/2014 14:10	6010C	1

[illegible]

LCS 180-108295/15-A	Solid	LCS	6010C	1
LCS 180-108295/15-A	Solid	LCS	6010C	1
LCS 180-108295/15-A	Solid	LCS	6010C	1
LCS 180-108295/15-A	Solid	LCS	6010C	1
LCS 180-108295/15-A	Solid	LCS	6010C	1
LCS 180-108295/15-A	Solid	LCS	6010C	1
LCS 180-108295/15-A	Solid	LCS	6010C	1
LCS 180-108339/2-A	Solid	LCS	7470A	1
LCS 180-108340/2-A	Solid	LCS	7470A	1
LCSD 180-108294/14-A	Solid	LCSD	6010C	1
LCSD 180-108294/14-A	Solid	LCSD	6010C	1
LCSD 180-108294/14-A	Solid	LCSD	6010C	1
LCSD 180-108294/14-A	Solid	LCSD	6010C	1
LCSD 180-108294/14-A	Solid	LCSD	6010C	1
LCSD 180-108294/14-A	Solid	LCSD	6010C	1
LCSD 180-108294/14-A	Solid	LCSD	6010C	1
LCSD 180-108340/3-A	Solid	LCSD	7470A	1
LB 180-108124/11-B	Solid	LB	6010C	1
LB 180-108124/11-B	Solid	LB	6010C	1
LB 180-108124/11-B	Solid	LB	6010C	1
LB 180-108124/11-B	Solid	LB	6010C	1
LB 180-108124/11-B	Solid	LB	6010C	1
LB 180-108124/11-B	Solid	LB	6010C	1
LB 180-108124/11-B	Solid	LB	6010C	1
LB 180-108124/11-D	Solid	LB	7470A	1
LB 180-108129/15-B	Solid	LB	6010C	1
LB 180-108129/15-B	Solid	LB	6010C	1
LB 180-108129/15-B	Solid	LB	6010C	1
LB 180-108129/15-B	Solid	LB	6010C	1
LB 180-108129/15-B	Solid	LB	6010C	1
LB 180-108129/15-B	Solid	LB	6010C	1
LB 180-108129/15-B	Solid	LB	6010C	1
LB 180-108129/15-C	Solid	LB	7470A	1
MB 180-108294/12-A	Solid	MB	6010C	1

MB 180-108294/12-A		Solid	MB		6010C	1
MB 180-108294/12-A		Solid	MB		6010C	1
MB 180-108294/12-A		Solid	MB		6010C	1
MB 180-108294/12-A		Solid	MB		6010C	1
MB 180-108294/12-A		Solid	MB		6010C	1
MB 180-108294/12-A		Solid	MB		6010C	1
MB 180-108295/14-A		Solid	MB		6010C	1
MB 180-108295/14-A		Solid	MB		6010C	1
MB 180-108295/14-A		Solid	MB		6010C	1
MB 180-108295/14-A		Solid	MB		6010C	1
MB 180-108295/14-A		Solid	MB		6010C	1
MB 180-108295/14-A		Solid	MB		6010C	1
MB 180-108295/14-A		Solid	MB		6010C	1
MB 180-108339/1-A		Solid	MB		7470A	1
MB 180-108340/1-A		Solid	MB		7470A	1
180-33599-7	H-SW-01	Solid	MS	06/03/2014 10:44	6010C	1
180-33599-7	H-SW-01	Solid	MS	06/03/2014 10:44	6010C	1
180-33599-7	H-SW-01	Solid	MS	06/03/2014 10:44	6010C	1
180-33599-7	H-SW-01	Solid	MS	06/03/2014 10:44	6010C	1
180-33599-7	H-SW-01	Solid	MS	06/03/2014 10:44	6010C	1
180-33599-7	H-SW-01	Solid	MS	06/03/2014 10:44	6010C	1
180-33599-7	H-SW-01	Solid	MS	06/03/2014 10:44	6010C	1
180-33599-7	H-SW-01	Solid	MS	06/03/2014 10:44	7470A	1
180-33599-7	H-SW-01	Solid	MSD	06/03/2014 10:44	6010C	1
180-33599-7	H-SW-01	Solid	MSD	06/03/2014 10:44	6010C	1
180-33599-7	H-SW-01	Solid	MSD	06/03/2014 10:44	6010C	1
180-33599-7	H-SW-01	Solid	MSD	06/03/2014 10:44	6010C	1
180-33599-7	H-SW-01	Solid	MSD	06/03/2014 10:44	6010C	1
180-33599-7	H-SW-01	Solid	MSD	06/03/2014 10:44	6010C	1
180-33599-7	H-SW-01	Solid	MSD	06/03/2014 10:44	6010C	1
180-33599-7	H-SW-01	Solid	MSD	06/03/2014 10:44	7470A	1

Analysis Date	CAS	Analyte	Result	Unit	Flag	High Limit	High Limit Type	Low Limit	Low Limit Type	Percent Recovery
06/12/2014 14:27	7440-38-2	Arsenic	ND	mg/L		0.50	RL	0.030	MDL	
06/12/2014 14:27	7440-39-3	Barium	1.2	mg/L	J B	2.0	RL	0.0019	MDL	
06/12/2014 14:27	7440-43-9	Cadmium	3.9	mg/L		0.50	RL	0.0017	MDL	
06/12/2014 14:27	7440-47-3	Chromium	0.43	mg/L	J	0.50	RL	0.010	MDL	
06/12/2014 14:27	7439-92-1	Lead	ND	mg/L		0.50	RL	0.015	MDL	
06/12/2014 14:27	7782-49-2	Selenium	0.035	mg/L	J B	0.50	RL	0.017	MDL	
06/12/2014 14:27	7440-22-4	Silver	ND	mg/L		0.50	RL	0.0027	MDL	
06/12/2014 15:11	7439-97-6	Mercury	ND	mg/L		0.00020	RL	0.000038	MDL	
06/12/2014 15:08	7440-38-2	Arsenic	ND	mg/L		0.50	RL	0.030	MDL	
06/12/2014 15:08	7440-39-3	Barium	1.3	mg/L	J B	2.0	RL	0.0019	MDL	
06/12/2014 15:08	7440-43-9	Cadmium	5.3	mg/L		0.50	RL	0.0017	MDL	
06/12/2014 15:08	7440-47-3	Chromium	0.36	mg/L	J	0.50	RL	0.010	MDL	
06/12/2014 15:08	7439-92-1	Lead	0.021	mg/L	J	0.50	RL	0.015	MDL	
06/12/2014 15:08	7782-49-2	Selenium	0.050	mg/L	J B	0.50	RL	0.017	MDL	
06/12/2014 15:08	7440-22-4	Silver	ND	mg/L		0.50	RL	0.0027	MDL	
06/12/2014 15:21	7439-97-6	Mercury	ND	mg/L		0.00020	RL	0.000038	MDL	
06/12/2014 12:24	7440-38-2	Arsenic	ND	mg/L		0.50	RL	0.030	MDL	
06/12/2014 12:24	7440-39-3	Barium	0.59	mg/L	J	2.0	RL	0.0019	MDL	
06/12/2014 12:24	7440-43-9	Cadmium	0.0024	mg/L	J B	0.50	RL	0.0017	MDL	
06/12/2014 12:24	7440-47-3	Chromium	0.27	mg/L	J	0.50	RL	0.010	MDL	
06/12/2014 12:24	7439-92-1	Lead	ND	mg/L		0.50	RL	0.015	MDL	
06/12/2014 12:24	7782-49-2	Selenium	0.028	mg/L	J	0.50	RL	0.017	MDL	
06/12/2014 12:24	7440-22-4	Silver	0.0029	mg/L	J	0.50	RL	0.0027	MDL	
06/12/2014 16:08	7439-97-6	Mercury	ND	mg/L		0.00020	RL	0.000038	MDL	
06/12/2014 12:29	7440-38-2	Arsenic	ND	mg/L		0.50	RL	0.030	MDL	
06/12/2014 12:29	7440-39-3	Barium	0.45	mg/L	J	2.0	RL	0.0019	MDL	
06/12/2014 12:29	7440-43-9	Cadmium	ND	mg/L		0.50	RL	0.0017	MDL	
06/12/2014 12:29	7440-47-3	Chromium	0.15	mg/L	J	0.50	RL	0.010	MDL	
06/12/2014 12:29	7439-92-1	Lead	ND	mg/L		0.50	RL	0.015	MDL	
06/12/2014 12:29	7782-49-2	Selenium	0.036	mg/L	J	0.50	RL	0.017	MDL	
06/12/2014 12:29	7440-22-4	Silver	ND	mg/L		0.50	RL	0.0027	MDL	
06/12/2014 16:10	7439-97-6	Mercury	ND	mg/L		0.00020	RL	0.000038	MDL	
06/12/2014 15:33	7440-38-2	Arsenic	ND	mg/L		0.50	RL	0.030	MDL	

06/12/2014 15:33	7440-39-3	Barium	1.1	mg/L	J B	2.0	RL	0.0019	MDL
06/12/2014 15:33	7440-43-9	Cadmium	4.1	mg/L		0.50	RL	0.0017	MDL
06/12/2014 15:33	7440-47-3	Chromium	0.45	mg/L	J	0.50	RL	0.010	MDL
06/12/2014 15:33	7439-92-1	Lead	ND	mg/L		0.50	RL	0.015	MDL
06/12/2014 15:33	7782-49-2	Selenium	0.031	mg/L	J B	0.50	RL	0.017	MDL
06/12/2014 15:33	7440-22-4	Silver	ND	mg/L		0.50	RL	0.0027	MDL
06/12/2014 15:25	7439-97-6	Mercury	ND	mg/L		0.00020	RL	0.000038	MDL
06/12/2014 12:49	7440-38-2	Arsenic	ND	mg/L		0.50	RL	0.030	MDL
06/12/2014 12:49	7440-39-3	Barium	0.53	mg/L	J	2.0	RL	0.0019	MDL
06/12/2014 12:49	7440-43-9	Cadmium	ND	mg/L		0.50	RL	0.0017	MDL
06/12/2014 12:49	7440-47-3	Chromium	0.23	mg/L	J	0.50	RL	0.010	MDL
06/12/2014 12:49	7439-92-1	Lead	ND	mg/L		0.50	RL	0.015	MDL
06/12/2014 12:49	7782-49-2	Selenium	0.033	mg/L	J	0.50	RL	0.017	MDL
06/12/2014 12:49	7440-22-4	Silver	ND	mg/L		0.50	RL	0.0027	MDL
06/12/2014 16:12	7439-97-6	Mercury	ND	mg/L		0.00020	RL	0.000038	MDL
06/12/2014 15:38	7440-38-2	Arsenic	ND	mg/L		0.50	RL	0.030	MDL
06/12/2014 15:38	7440-39-3	Barium	1.4	mg/L	J B	2.0	RL	0.0019	MDL
06/12/2014 15:38	7440-43-9	Cadmium	3.0	mg/L		0.50	RL	0.0017	MDL
06/12/2014 15:38	7440-47-3	Chromium	0.28	mg/L	J	0.50	RL	0.010	MDL
06/12/2014 15:38	7439-92-1	Lead	ND	mg/L		0.50	RL	0.015	MDL
06/12/2014 15:38	7782-49-2	Selenium	0.045	mg/L	J B	0.50	RL	0.017	MDL
06/12/2014 15:38	7440-22-4	Silver	ND	mg/L		0.50	RL	0.0027	MDL
06/12/2014 15:27	7439-97-6	Mercury	ND	mg/L		0.00020	RL	0.000038	MDL
06/12/2014 14:47	7440-38-2	Arsenic	ND	mg/L		0.50	RL	0.030	MDL
06/12/2014 14:47	7440-39-3	Barium	1.4	mg/L	J B	2.0	RL	0.0019	MDL
06/12/2014 14:47	7440-43-9	Cadmium	2.9	mg/L		0.50	RL	0.0017	MDL
06/12/2014 14:47	7440-47-3	Chromium	0.28	mg/L	J	0.50	RL	0.010	MDL
06/12/2014 14:47	7439-92-1	Lead	ND	mg/L		0.50	RL	0.015	MDL
06/12/2014 14:47	7782-49-2	Selenium	0.017	mg/L	J B	0.50	RL	0.017	MDL
06/12/2014 14:47	7440-22-4	Silver	0.0027	mg/L	J	0.50	RL	0.0027	MDL
06/12/2014 15:04	7439-97-6	Mercury	ND	mg/L		0.00020	RL	0.000038	MDL
06/12/2014 14:52	7440-38-2	Arsenic	ND	mg/L		0.50	RL	0.030	MDL
06/12/2014 14:52	7440-39-3	Barium	1.4	mg/L	J B	2.0	RL	0.0019	MDL
06/12/2014 14:52	7440-43-9	Cadmium	3.2	mg/L		0.50	RL	0.0017	MDL

06/12/2014 14:52	7440-47-3	Chromium	0.31	mg/L	J	0.50	RL	0.010	MDL
06/12/2014 14:52	7439-92-1	Lead	ND	mg/L		0.50	RL	0.015	MDL
06/12/2014 14:52	7782-49-2	Selenium	0.059	mg/L	J B	0.50	RL	0.017	MDL
06/12/2014 14:52	7440-22-4	Silver	ND	mg/L		0.50	RL	0.0027	MDL
06/12/2014 15:05	7439-97-6	Mercury	ND	mg/L		0.00020	RL	0.000038	MDL
06/12/2014 15:13	7440-38-2	Arsenic	ND	mg/L		0.50	RL	0.030	MDL
06/12/2014 15:13	7440-39-3	Barium	1.3	mg/L	J B	2.0	RL	0.0019	MDL
06/12/2014 15:13	7440-43-9	Cadmium	3.3	mg/L		0.50	RL	0.0017	MDL
06/12/2014 15:13	7440-47-3	Chromium	0.35	mg/L	J	0.50	RL	0.010	MDL
06/12/2014 15:13	7439-92-1	Lead	ND	mg/L		0.50	RL	0.015	MDL
06/12/2014 15:13	7782-49-2	Selenium	0.028	mg/L	J B	0.50	RL	0.017	MDL
06/12/2014 15:13	7440-22-4	Silver	ND	mg/L		0.50	RL	0.0027	MDL
06/12/2014 15:23	7439-97-6	Mercury	ND	mg/L		0.00020	RL	0.000038	MDL
06/12/2014 12:14	7440-38-2	Arsenic	ND	mg/L		0.50	RL	0.030	MDL
06/12/2014 12:14	7440-39-3	Barium	0.50	mg/L	J	2.0	RL	0.0019	MDL
06/12/2014 12:14	7440-43-9	Cadmium	ND	mg/L		0.50	RL	0.0017	MDL
06/12/2014 12:14	7440-47-3	Chromium	0.15	mg/L	J	0.50	RL	0.010	MDL
06/12/2014 12:14	7439-92-1	Lead	ND	mg/L		0.50	RL	0.015	MDL
06/12/2014 12:14	7782-49-2	Selenium	0.029	mg/L	J	0.50	RL	0.017	MDL
06/12/2014 12:14	7440-22-4	Silver	ND	mg/L		0.50	RL	0.0027	MDL
06/12/2014 16:05	7439-97-6	Mercury	ND	mg/L		0.00020	RL	0.000038	MDL
06/12/2014 12:19	7440-38-2	Arsenic	ND	mg/L		0.50	RL	0.030	MDL
06/12/2014 12:19	7440-39-3	Barium	0.56	mg/L	J	2.0	RL	0.0019	MDL
06/12/2014 12:19	7440-43-9	Cadmium	ND	mg/L		0.50	RL	0.0017	MDL
06/12/2014 12:19	7440-47-3	Chromium	0.19	mg/L	J	0.50	RL	0.010	MDL
06/12/2014 12:19	7439-92-1	Lead	ND	mg/L		0.50	RL	0.015	MDL
06/12/2014 12:19	7782-49-2	Selenium	0.037	mg/L	J	0.50	RL	0.017	MDL
06/12/2014 12:19	7440-22-4	Silver	ND	mg/L		0.50	RL	0.0027	MDL
06/12/2014 16:06	7439-97-6	Mercury	ND	mg/L		0.00020	RL	0.000038	MDL
06/12/2014 14:58	7440-38-2	Arsenic	ND	mg/L		0.50	RL	0.030	MDL
06/12/2014 14:58	7440-39-3	Barium	1.4	mg/L	J B	2.0	RL	0.0019	MDL
06/12/2014 14:58	7440-43-9	Cadmium	2.7	mg/L		0.50	RL	0.0017	MDL
06/12/2014 14:58	7440-47-3	Chromium	0.16	mg/L	J	0.50	RL	0.010	MDL
06/12/2014 14:58	7439-92-1	Lead	ND	mg/L		0.50	RL	0.015	MDL

06/12/2014 14:58	7782-49-2	Selenium	0.027	mg/L	J B	0.50	RL	0.017	MDL	
06/12/2014 14:58	7440-22-4	Silver	ND	mg/L		0.50	RL	0.0027	MDL	
06/12/2014 15:07	7439-97-6	Mercury	ND	mg/L		0.00020	RL	0.000038	MDL	
06/12/2014 12:55	7440-38-2	Arsenic	ND	mg/L		0.50	RL	0.030	MDL	
06/12/2014 12:55	7440-39-3	Barium	0.51	mg/L	J	2.0	RL	0.0019	MDL	
06/12/2014 12:55	7440-43-9	Cadmium	0.0028	mg/L	J B	0.50	RL	0.0017	MDL	
06/12/2014 12:55	7440-47-3	Chromium	0.21	mg/L	J	0.50	RL	0.010	MDL	
06/12/2014 12:55	7439-92-1	Lead	ND	mg/L		0.50	RL	0.015	MDL	
06/12/2014 12:55	7782-49-2	Selenium	0.028	mg/L	J	0.50	RL	0.017	MDL	
06/12/2014 12:55	7440-22-4	Silver	ND	mg/L		0.50	RL	0.0027	MDL	
06/12/2014 16:14	7439-97-6	Mercury	ND	mg/L		0.00020	RL	0.000038	MDL	
06/12/2014 15:44	7440-38-2	Arsenic	ND	mg/L		0.50	RL	0.030	MDL	
06/12/2014 15:44	7440-39-3	Barium	1.6	mg/L	J B	2.0	RL	0.0019	MDL	
06/12/2014 15:44	7440-43-9	Cadmium	4.4	mg/L		0.50	RL	0.0017	MDL	
06/12/2014 15:44	7440-47-3	Chromium	0.44	mg/L	J	0.50	RL	0.010	MDL	
06/12/2014 15:44	7439-92-1	Lead	0.017	mg/L	J	0.50	RL	0.015	MDL	
06/12/2014 15:44	7782-49-2	Selenium	0.021	mg/L	J B	0.50	RL	0.017	MDL	
06/12/2014 15:44	7440-22-4	Silver	ND	mg/L		0.50	RL	0.0027	MDL	
06/12/2014 15:29	7439-97-6	Mercury	ND	mg/L		0.00020	RL	0.000038	MDL	
06/12/2014 15:03	7440-38-2	Arsenic	ND	mg/L		0.50	RL	0.030	MDL	
06/12/2014 15:03	7440-39-3	Barium	1.5	mg/L	J B	2.0	RL	0.0019	MDL	
06/12/2014 15:03	7440-43-9	Cadmium	4.0	mg/L		0.50	RL	0.0017	MDL	
06/12/2014 15:03	7440-47-3	Chromium	0.32	mg/L	J	0.50	RL	0.010	MDL	
06/12/2014 15:03	7439-92-1	Lead	ND	mg/L		0.50	RL	0.015	MDL	
06/12/2014 15:03	7782-49-2	Selenium	0.035	mg/L	J B	0.50	RL	0.017	MDL	
06/12/2014 15:03	7440-22-4	Silver	ND	mg/L		0.50	RL	0.0027	MDL	
06/12/2014 15:09	7439-97-6	Mercury	ND	mg/L		0.00020	RL	0.000038	MDL	
06/12/2014 11:49	7440-38-2	Arsenic	0.518	mg/L		0.050	RL	0.0030	MDL	104
06/12/2014 11:49	7440-39-3	Barium	1.99	mg/L		0.20	RL	0.00019	MDL	100
06/12/2014 11:49	7440-43-9	Cadmium	0.0474	mg/L	J	0.050	RL	0.00017	MDL	95
06/12/2014 11:49	7440-47-3	Chromium	0.202	mg/L		0.050	RL	0.0010	MDL	101
06/12/2014 11:49	7439-92-1	Lead	0.490	mg/L		0.050	RL	0.0015	MDL	98
06/12/2014 11:49	7782-49-2	Selenium	0.501	mg/L		0.050	RL	0.0017	MDL	100
06/12/2014 11:49	7440-22-4	Silver	0.0502	mg/L		0.050	RL	0.00027	MDL	100

06/12/2014 13:37	7440-38-2	Arsenic	0.506	mg/L	0.050	RL	0.0030	MDL	101
06/12/2014 13:37	7440-39-3	Barium	1.98	mg/L	0.20	RL	0.00019	MDL	99
06/12/2014 13:37	7440-43-9	Cadmium	0.0467	mg/L J	0.050	RL	0.00017	MDL	93
06/12/2014 13:37	7440-47-3	Chromium	0.197	mg/L	0.050	RL	0.0010	MDL	99
06/12/2014 13:37	7439-92-1	Lead	0.484	mg/L	0.050	RL	0.0015	MDL	97
06/12/2014 13:37	7782-49-2	Selenium	0.489	mg/L	0.050	RL	0.0017	MDL	98
06/12/2014 13:37	7440-22-4	Silver	0.0501	mg/L	0.050	RL	0.00027	MDL	100
06/12/2014 15:00	7439-97-6	Mercury	0.00254	mg/L	0.00020	RL	0.000038	MDL	102
06/12/2014 15:32	7439-97-6	Mercury	0.00244	mg/L	0.00020	RL	0.000038	MDL	98
06/12/2014 11:54	7440-38-2	Arsenic	0.522	mg/L	0.050	RL	0.0030	MDL	104
06/12/2014 11:54	7440-39-3	Barium	2.00	mg/L	0.20	RL	0.00019	MDL	100
06/12/2014 11:54	7440-43-9	Cadmium	0.0480	mg/L J	0.050	RL	0.00017	MDL	96
06/12/2014 11:54	7440-47-3	Chromium	0.200	mg/L	0.050	RL	0.0010	MDL	100
06/12/2014 11:54	7439-92-1	Lead	0.498	mg/L	0.050	RL	0.0015	MDL	100
06/12/2014 11:54	7782-49-2	Selenium	0.507	mg/L	0.050	RL	0.0017	MDL	101
06/12/2014 11:54	7440-22-4	Silver	0.0507	mg/L	0.050	RL	0.00027	MDL	101
06/12/2014 15:34	7439-97-6	Mercury	0.00233	mg/L	0.00020	RL	0.000038	MDL	93
06/12/2014 11:31	7440-38-2	Arsenic	ND	mg/L	0.50	RL	0.030	MDL	
06/12/2014 11:31	7440-39-3	Barium	ND	mg/L	2.0	RL	0.0019	MDL	
06/12/2014 11:31	7440-43-9	Cadmium	0.00170	mg/L J	0.50	RL	0.0017	MDL	
06/12/2014 11:31	7440-47-3	Chromium	ND	mg/L	0.50	RL	0.010	MDL	
06/12/2014 11:31	7439-92-1	Lead	ND	mg/L	0.50	RL	0.015	MDL	
06/12/2014 11:31	7782-49-2	Selenium	ND	mg/L	0.50	RL	0.017	MDL	
06/12/2014 11:31	7440-22-4	Silver	ND	mg/L	0.50	RL	0.0027	MDL	
06/12/2014 15:53	7439-97-6	Mercury	ND	mg/L	0.00020	RL	0.000038	MDL	
06/12/2014 13:32	7440-38-2	Arsenic	ND	mg/L	0.50	RL	0.030	MDL	
06/12/2014 13:32	7440-39-3	Barium	0.00830	mg/L J	2.0	RL	0.0019	MDL	
06/12/2014 13:32	7440-43-9	Cadmium	ND	mg/L	0.50	RL	0.0017	MDL	
06/12/2014 13:32	7440-47-3	Chromium	ND	mg/L	0.50	RL	0.010	MDL	
06/12/2014 13:32	7439-92-1	Lead	ND	mg/L	0.50	RL	0.015	MDL	
06/12/2014 13:32	7782-49-2	Selenium	0.0221	mg/L J	0.50	RL	0.017	MDL	
06/12/2014 13:32	7440-22-4	Silver	ND	mg/L	0.50	RL	0.0027	MDL	
06/12/2014 15:01	7439-97-6	Mercury	ND	mg/L	0.00020	RL	0.000038	MDL	
06/12/2014 11:26	7440-38-2	Arsenic	ND	mg/L	0.050	RL	0.0030	MDL	

06/12/2014 11:26	7440-39-3	Barium	ND	mg/L	0.20	RL	0.00019	MDL	
06/12/2014 11:26	7440-43-9	Cadmium	ND	mg/L	0.050	RL	0.00017	MDL	
06/12/2014 11:26	7440-47-3	Chromium	ND	mg/L	0.050	RL	0.0010	MDL	
06/12/2014 11:26	7439-92-1	Lead	ND	mg/L	0.050	RL	0.0015	MDL	
06/12/2014 11:26	7782-49-2	Selenium	ND	mg/L	0.050	RL	0.0017	MDL	
06/12/2014 11:26	7440-22-4	Silver	ND	mg/L	0.050	RL	0.00027	MDL	
06/12/2014 13:27	7440-38-2	Arsenic	ND	mg/L	0.050	RL	0.0030	MDL	
06/12/2014 13:27	7440-39-3	Barium	ND	mg/L	0.20	RL	0.00019	MDL	
06/12/2014 13:27	7440-43-9	Cadmium	ND	mg/L	0.050	RL	0.00017	MDL	
06/12/2014 13:27	7440-47-3	Chromium	ND	mg/L	0.050	RL	0.0010	MDL	
06/12/2014 13:27	7439-92-1	Lead	ND	mg/L	0.050	RL	0.0015	MDL	
06/12/2014 13:27	7782-49-2	Selenium	ND	mg/L	0.050	RL	0.0017	MDL	
06/12/2014 13:27	7440-22-4	Silver	ND	mg/L	0.050	RL	0.00027	MDL	
06/12/2014 14:58	7439-97-6	Mercury	ND	mg/L	0.00020	RL	0.000038	MDL	
06/12/2014 15:31	7439-97-6	Mercury	ND	mg/L	0.00020	RL	0.000038	MDL	
06/12/2014 14:32	7440-38-2	Arsenic	5.36	mg/L	0.50	RL	0.030	MDL	107
06/12/2014 14:32	7440-39-3	Barium	47.9	mg/L	2.0	RL	0.0019	MDL	94
06/12/2014 14:32	7440-43-9	Cadmium	4.77	mg/L	0.50	RL	0.0017	MDL	88
06/12/2014 14:32	7440-47-3	Chromium	5.27	mg/L	0.50	RL	0.010	MDL	97
06/12/2014 14:32	7439-92-1	Lead	4.73	mg/L	0.50	RL	0.015	MDL	95
06/12/2014 14:32	7782-49-2	Selenium	1.05	mg/L	0.50	RL	0.017	MDL	102
06/12/2014 14:32	7440-22-4	Silver	0.896	mg/L	0.50	RL	0.0027	MDL	90
06/12/2014 15:13	7439-97-6	Mercury	0.00565	mg/L	0.00020	RL	0.000038	MDL	113
06/12/2014 14:37	7440-38-2	Arsenic	5.28	mg/L	0.50	RL	0.030	MDL	106
06/12/2014 14:37	7440-39-3	Barium	45.4	mg/L	2.0	RL	0.0019	MDL	88
06/12/2014 14:37	7440-43-9	Cadmium	4.62	mg/L F1	0.50	RL	0.0017	MDL	72
06/12/2014 14:37	7440-47-3	Chromium	5.32	mg/L	0.50	RL	0.010	MDL	98
06/12/2014 14:37	7439-92-1	Lead	4.59	mg/L	0.50	RL	0.015	MDL	92
06/12/2014 14:37	7782-49-2	Selenium	1.04	mg/L	0.50	RL	0.017	MDL	101
06/12/2014 14:37	7440-22-4	Silver	0.889	mg/L	0.50	RL	0.0027	MDL	89
06/12/2014 15:19	7439-97-6	Mercury	0.00546	mg/L	0.00020	RL	0.000038	MDL	109

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06/06/2014 08:50	180-108129	1311
06/06/2014 08:50	180-108129	1311
06/06/2014 08:50	180-108129	1311
06/06/2014 08:50	180-108129	1311
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06/06/2014 08:50	180-108129	1311
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06/06/2014 08:50	180-108129	1311
06/06/2014 08:50	180-108129	1311
06/06/2014 08:50	180-108129	1311
06/06/2014 08:50	180-108124	1311
06/06/2014 08:50	180-108124	1311
06/06/2014 08:50	180-108124	1311
06/06/2014 08:50	180-108124	1311
06/06/2014 08:50	180-108124	1311
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06/06/2014 08:50	180-108124	1311
06/06/2014 08:50	180-108124	1311
06/06/2014 08:50	180-108124	1311
06/06/2014 08:50	180-108124	1311
06/06/2014 08:50	180-108129	1311
06/06/2014 08:50	180-108129	1311
06/06/2014 08:50	180-108129	1311
06/06/2014 08:50	180-108129	1311

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Lab Control Sample		1311
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Lab Control Sample Duplicate		1311
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Lab Control Sample Duplicate		1311
TCLP SPLPE Leachate Blank	180-108124	1311
TCLP SPLPE Leachate Blank	180-108124	1311
TCLP SPLPE Leachate Blank	180-108124	1311
TCLP SPLPE Leachate Blank	180-108124	1311
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TCLP SPLPE Leachate Blank	180-108124	1311
TCLP SPLPE Leachate Blank	180-108129	1311
TCLP SPLPE Leachate Blank	180-108129	1311
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TCLP SPLPE Leachate Blank	180-108129	1311
TCLP SPLPE Leachate Blank	180-108129	1311
TCLP SPLPE Leachate Blank	180-108129	1311
Method Blank		1311

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	180-108295	3010A	06/12/2014 05:47	Total/NA	50	mL	50
	180-108295	3010A	06/12/2014 05:47	Total/NA	50	mL	50
	180-108295	3010A	06/12/2014 05:47	Total/NA	50	mL	50
	180-108295	3010A	06/12/2014 05:47	Total/NA	50	mL	50
	180-108295	3010A	06/12/2014 05:47	Total/NA	50	mL	50
	180-108295	3010A	06/12/2014 05:47	Total/NA	50	mL	50
	180-108295	3010A	06/12/2014 05:47	Total/NA	50	mL	50
	180-108339	7470A	06/12/2014 09:02	Total/NA	50.0	mL	50.0
	180-108340	7470A	06/12/2014 09:03	Total/NA	50.0	mL	50.0
	180-108294	3010A	06/12/2014 05:46	Total/NA	50	mL	50
	180-108294	3010A	06/12/2014 05:46	Total/NA	50	mL	50
	180-108294	3010A	06/12/2014 05:46	Total/NA	50	mL	50
	180-108294	3010A	06/12/2014 05:46	Total/NA	50	mL	50
	180-108294	3010A	06/12/2014 05:46	Total/NA	50	mL	50
	180-108294	3010A	06/12/2014 05:46	Total/NA	50	mL	50
	180-108294	3010A	06/12/2014 05:46	Total/NA	50	mL	50
	180-108340	7470A	06/12/2014 09:03	Total/NA	50.0	mL	50.0
06/10/2014 14:06	180-108294	3010A	06/12/2014 05:46	TCLP	5	mL	50
06/10/2014 14:06	180-108294	3010A	06/12/2014 05:46	TCLP	5	mL	50
06/10/2014 14:06	180-108294	3010A	06/12/2014 05:46	TCLP	5	mL	50
06/10/2014 14:06	180-108294	3010A	06/12/2014 05:46	TCLP	5	mL	50
06/10/2014 14:06	180-108294	3010A	06/12/2014 05:46	TCLP	5	mL	50
06/10/2014 14:06	180-108294	3010A	06/12/2014 05:46	TCLP	5	mL	50
06/10/2014 14:06	180-108294	3010A	06/12/2014 05:46	TCLP	5	mL	50
06/10/2014 14:06	180-108340	7470A	06/12/2014 09:03	TCLP	50.0	mL	50.0
06/10/2014 14:34	180-108295	3010A	06/12/2014 05:47	TCLP	5	mL	50
06/10/2014 14:34	180-108295	3010A	06/12/2014 05:47	TCLP	5	mL	50
06/10/2014 14:34	180-108295	3010A	06/12/2014 05:47	TCLP	5	mL	50
06/10/2014 14:34	180-108295	3010A	06/12/2014 05:47	TCLP	5	mL	50
06/10/2014 14:34	180-108295	3010A	06/12/2014 05:47	TCLP	5	mL	50
06/10/2014 14:34	180-108295	3010A	06/12/2014 05:47	TCLP	5	mL	50
06/10/2014 14:34	180-108295	3010A	06/12/2014 05:47	TCLP	5	mL	50
06/10/2014 14:34	180-108339	7470A	06/12/2014 09:02	TCLP	50.0	mL	50.0
	180-108294	3010A	06/12/2014 05:46	Total/NA	50	mL	50

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Final Amount Unit	Re-Analysis Type	Analysis Batch	Analysis Lab	Instrument ID	Column/Detector ID	Basis	Analyte Type
mL		180-108411	TestAmerica Pittsburgh	C		WET	Target
mL		180-108411	TestAmerica Pittsburgh	C		WET	Target
mL		180-108411	TestAmerica Pittsburgh	C		WET	Target
mL		180-108411	TestAmerica Pittsburgh	C		WET	Target
mL		180-108411	TestAmerica Pittsburgh	C		WET	Target
mL		180-108411	TestAmerica Pittsburgh	C		WET	Target
mL		180-108411	TestAmerica Pittsburgh	C		WET	Target
mL		180-108404	TestAmerica Pittsburgh	K		WET	Target
mL		180-108411	TestAmerica Pittsburgh	C		WET	Target
mL		180-108411	TestAmerica Pittsburgh	C		WET	Target
mL		180-108411	TestAmerica Pittsburgh	C		WET	Target
mL		180-108411	TestAmerica Pittsburgh	C		WET	Target
mL		180-108411	TestAmerica Pittsburgh	C		WET	Target
mL		180-108411	TestAmerica Pittsburgh	C		WET	Target
mL		180-108411	TestAmerica Pittsburgh	C		WET	Target
mL		180-108404	TestAmerica Pittsburgh	K		WET	Target
mL		180-108389	TestAmerica Pittsburgh	C		WET	Target
mL		180-108389	TestAmerica Pittsburgh	C		WET	Target
mL		180-108389	TestAmerica Pittsburgh	C		WET	Target
mL		180-108389	TestAmerica Pittsburgh	C		WET	Target
mL		180-108389	TestAmerica Pittsburgh	C		WET	Target
mL		180-108389	TestAmerica Pittsburgh	C		WET	Target
mL		180-108389	TestAmerica Pittsburgh	C		WET	Target
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mL		180-108389	TestAmerica Pittsburgh	C		WET	Target
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PRIMARY	0.00500	0.00500
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PRIMARY	50.0	51.2
PRIMARY	1.00	4.90
PRIMARY	5.00	5.43
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PRIMARY	1.00	1.04
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Upper Breach Limit	Validator Qualifier Flag	Definition Flag	Validator Modified Value
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	U	B-2	2.0
	U	B-2	0.50
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UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

REGION 4
ATLANTA FEDERAL CENTER
61 FORSYTH STREET
ATLANTA, GEORGIA 30303-8960

JAN 14 2014

CERTIFIED MAIL
RETURN RECEIPT REQUESTED

Ray Williams
President
US Technology Services
4200 Munson St. NW
Canton, Ohio 44718

Re: Opportunity to Show Cause
US Technology Service, Macon, Georgia

Dear Mr. Williams:

On April 15, 2013, a compliance evaluation inspection (CEI) was conducted by the U.S. Environmental Protection Agency at the US Technology Services facility (hereinafter known as "the facility" or UT) in Macon, Georgia, to determine the facility's compliance status with the Resource Conservation and Recovery Act (RCRA). This RCRA CEI was an EPA-lead inspection.

Based on observations made during the CEI and additional information submitted by the UT, the EPA has determined that the facility may not be in compliance with the requirements of the Georgia Hazardous Waste Management Act (Subtitle C of RCRA, 42 U.S.C. §§ 6921 to 6939e), and the regulations promulgated pursuant thereto, found at the Georgia Hazardous Waste Management Regulations (40 C.F.R. Parts 260 through 279). The deficiencies observed are summarized in the RCRA CEI Report.

UT is being offered the opportunity to meet with the EPA at its regional office located in the Atlanta Federal Center, 61 Forsyth Street, SW, Atlanta, Georgia, 30303, or by teleconference, to show cause why the EPA should not take formal enforcement action against UT pursuant to Section 3008(a) of RCRA, 42 U.S.C. § 6928(a). Should formal enforcement be determined appropriate, the EPA may assess civil penalties pursuant to Section 3008(a) of RCRA, 42 U.S.C. § 6928(a).

Although this proposed meeting is informal in nature, UT may elect to be represented by legal counsel. During the meeting UT should be prepared to present information relevant to the factual basis of the EPA's allegations, and factors that might mitigate any penalties that may be assessed against the facility. UT should be prepared to provide documentation of all matters presented at the meeting, including information on UT's ability to pay a penalty. UT may elect to review the RCRA Civil Penalty Policy found at <http://www.epa.gov/compliance/resources/policies/civil/rcra/rcpp2003-fnl.pdf>, and the revised penalty matrices found at <http://www.epa.gov/compliance/resources/policies/civil/penalty/rcpprevisedtables09.pdf>, prior to the meeting.

Any information provided by UT at the meeting may be used by the EPA in any civil or criminal proceedings related to this or other matters. Please be further advised that any false, fictitious, or fraudulent material omissions, statements, or representations may subject UT to criminal penalties under Section 3008(d)(3) of RCRA, 42 U.S.C. § 6928(d)(3).

The Small Business Regulatory Enforcement and Fairness Act (SBREFA) provides small businesses with the opportunity to submit comments on regulatory enforcement at the time of an Agency enforcement activity. Enclosed is a copy of the "Office of Enforcement and Compliance Assurance Information Sheet" for Small Business (Enclosure A). This document will provide you with information regarding compliance and rights UT may be entitled to under the SBREFA. You may also retrieve additional copies at: <http://www.epa.gov/sbrefa/documents/rfaguidance11-00-06.pdf>.

If UT chooses to accept this offer to meet with the EPA, the facility should contact Mr. Héctor M. Danois, of the RCRA and OPA Enforcement and Compliance Branch, **within fourteen (14) days** following receipt of this correspondence to schedule a meeting or conference call. Mr. Danois can be reached at (404) 562-8556, or by email at danois.hector@epa.gov. Also, please contact Mr. Danois for any technical questions regarding the alleged violations.

If you decide not to accept this offer, the EPA may proceed with enforcement action against the facility as authorized under Section 3008(a) of RCRA, 42 U.S.C. § 6928(a), including the assessment of appropriate civil penalties and injunctive relief.

Sincerely,



César A. Zapata
Chief, RCRA and OPA Enforcement
and Compliance Branch
RCRA Division

cc: Amy Potter, GAEPD



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

REGION 4
ATLANTA FEDERAL CENTER
61 FORSYTH STREET
ATLANTA, GEORGIA 30303-8960

JUN 02 2014

CERTIFIED MAIL
RETURN RECEIPT REQUESTED

Ray Williams
President, US Technology Services
380 Allied Industrial Blvd.
Macon, Georgia 31206

SUBJ: RCRA Compliance Evaluation Inspection

US Technology Services
380 Allied Industrial Blvd.
Macon, Georgia 31206
EPA ID. No.: GAR 000 061 838

US Technology Aerospace Engineering
224 Highway 49 South
Byron, Georgia 31008
EPA ID. No.: GAR 000 061 846

Dear Mr. Williams:

On May 21, 2014, a Compliance Evaluation Inspection (CEI) was conducted by the U.S. Environmental Protection Agency at the US Technology Services (UT) in Macon, Georgia, and US Technology Aerospace Engineering in Byron, Georgia, to determine the facilities' compliance status with the Resource Conservation and Recovery Act (RCRA).

During the inspection, information was requested from you to help determine your compliance status. On May 30, 2014, UT submitted an inventory of spent media in Georgia, but additional information is required to assess regulatory compliance. Pursuant to Section 3007 of RCRA, 42 U.S.C. § 6927, UT is hereby directed to respond, fully and truthfully, within ten (10) calendar days of receipt of this letter, to the Information Request enclosed herein. Compliance with this request for information is mandatory, and information provided by UT may be used by the EPA in future enforcement actions. Failure to respond fully and truthfully to each and every question or information request within ten (10) calendar days of receipt of this letter, or to adequately justify such failure to respond, may result in further enforcement action against UT by the EPA pursuant to Section 3008 of RCRA, 42 U.S.C. § 6928.

Your response to this request for information should be mailed to:

Larry Lamberth
Chief, South Enforcement and Compliance Section
RCRA and OPA Enforcement and Compliance Branch
U.S. EPA, Region 4
61 Forsyth St., SW
Atlanta, Georgia 30303-3104

The information requested herein must be provided notwithstanding its possible characterization as confidential information or trade secrets. UT may, if desired, assert a business confidentiality claim covering part or all of the information requested, in the manner described in 40 C.F.R. § 2.203(b), by attaching to such information, at the time it is submitted, a suitable notice employing language such as "trade secret" or "proprietary" or "company confidential." Information covered by such a claim will be disclosed by the EPA only to the extent and only by means of the procedures set forth in 40 C.F.R. Part 2, Subpart B. If no such claim accompanies the information when it is received by the EPA, it may be made available to the Public by the EPA without further notice to UT. The EPA will construe the failure to furnish a confidentiality claim with your response to this letter as a waiver of that claim. UT should read the above-cited regulations carefully before asserting a business confidentiality claim, since certain categories of information are not properly the subject of such a claim.

This Information Request is not subject to the approval requirement of the Paper Reduction Act of 1980, 44 U.S.C. § 3501 et seq.

Should you have any questions on this matter, please contact Mr. Héctor M. Danois, of my staff, at (404) 562-8556.

Sincerely,

A handwritten signature in black ink, appearing to read "César A. Zapata", with a stylized flourish at the end.

César A. Zapata
Chief, RCRA and OPA Enforcement
and Compliance Branch
RCRA Division

Enclosure

Enclosure

Instructions

1. Identify the person(s) responding to these Information Requests on behalf of Respondent.
2. A separate response must be made to each of the Information Requests set forth herein.
3. Precede each answer with the number of the Information Request to which it corresponds.
4. In answering each Information Request question, identify all documents and persons consulted, examined, or referred to in the preparation of each response and provide true and accurate copies of all such documents.
5. If information not known or not available to you as of the date of submission of a response to this Information Request should later become known or available to you, you must supplement your response to the EPA. Moreover, should you find at any time after the submission of its response that any portion of the submitted information is false or misrepresents the truth; you must notify the EPA thereof as soon as possible.
6. For each document produced in response to this Information Request, indicate on the document, or in some other reasonable manner, the number of the question to which it responds.
7. Where specific information has not been memorialized in a document, but is nonetheless responsive to the Request, you must respond to the question with a written response.
8. If information responsive to this Information Request is not in your possession, custody or control, then identify the person from whom such information may be obtained.
9. If you have reason to believe that there may be persons able to provide a detailed or complete response to any Information Request question or who may be able to provide additional responsive documents, identify such persons and the additional information or documents that they may have.
10. The information requested herein must be provided even though the Respondent may contend that it includes possibly confidential information or trade secrets. **You may, if you desire, assert a confidentiality claim** covering part or all of the information requested, pursuant to Section 3007(b) of RCRA, 42 U.S.C. Section 6927(b), Sections 104(e)(7)(E) and (F) of CERCLA, 42 U.S.C. Sections 9604(e)(7)(E) and (F), and 40 C.F.R. Section 2.203(b), by attaching to such information at the time it is submitted, a cover sheet, stamped or typed legend, or other suitable form of notice employing language such as "**trade secret**," or "**proprietary**," or "**company confidential**." Information covered by such a claim will be disclosed by the EPA only to the extent, and only by means, of the procedures set forth in statutes and regulation set forth above. If no such claim accompanies the information when it is received by the EPA, it may be made available to the public by the EPA without further notice to you. You should read the above cited regulations carefully before asserting a business confidentiality claim, since certain categories of information are not properly the subject of such a claim.

Enclosure

Definitions

The following definitions shall apply to the following words as they appear in this Enclosure.

1. The terms **"AND"** and **"OR"** shall be construed either disjunctively or conjunctively as necessary to bring within the scope of this Information Request any information which might otherwise be construed to be outside their scope.
2. The term **"DISPOSAL"** shall mean the discharge, deposit, injection, dumping, spilling, leaking, or placing of any solid waste or hazardous waste into or on any land or water so that such solid waste or hazardous waste or any constituent thereof may enter the environment or be emitted into the air or discharged into any water, including groundwater.
3. The term **"DOCUMENT"** and **"DOCUMENTS"** shall include writings of any kind, formal or informal, whether or not wholly or partially in handwriting (including by way of illustration and not by way of limitation), any invoice, receipt, endorsement, check, bank draft, canceled check, deposit slip, withdrawal slip, order, correspondence, record book, minutes, memorandum of telephone and other conversations including meetings, agreements and the like, diary calendar, desk pad, scrapbook, notebook, bulletin, circular, form, pamphlet, statement, journal, postcard, letter, telegram, telex, report, notice, message, analysis, comparison, graph, chart, inter-office or intra-office communications, photostat or other copy of any documents, microfilm or other film record, photograph, sound recording on any type of device, punch card, disc or disc pack, tape or other type of memory generally associated with computers and data processing (together with the programming instructions and other written material necessary to use punch card, disc, disc pack, tape or the type of memory) including; (a) every copy of each document which is not an exact duplicate of a document which is produced, (b) every copy which has any writing, figure, notation, annotation, or the like of it, (c) drafts, (d) attachments to or enclosures with any document, and (e) every document referred to in any other document.
4. The term **"FACILITIES"** shall mean US Technology Services (UT) located at 380 Allied Industrial Blvd in Macon, Georgia and US Technology Aerospace Engineering (UTAE) located at 224 Highway 49 South, Byron, Georgia 31008
5. The term **"GENERATION"** shall mean any act or process which produces hazardous waste as identified or listed in 40 C.F.R. Part 261 or an act which first causes a hazardous waste to become subject to regulation.
6. The term **"HAZARDOUS SUBSTANCE"** means: (a) any substance designated pursuant to Section 311(b)(2)(A) of the Federal Water Pollution Control Act; (b) any element, compound, mixture, solution, or substance designated pursuant to Section 102 of CERCLA; (c) any hazardous waste having the characteristics identified under or listed pursuant to Section 3001 of RCRA (but not including any waste the regulation of which under RCRA has been suspended by Act of Congress); (d) any toxic pollutant listed under Section 307(a) of the Federal Water Pollution Control Act; (e) any hazardous air pollutant listed under Section 112 of the Clean Air Act; and (f) any imminently hazardous chemical substance or mixture with respect to which the

Enclosure

Administrator of the EPA has taken action pursuant to Section 7 of the Toxic Substances Control Act. The term does not include petroleum, including crude oil or any fraction thereof which is not otherwise specifically listed or designated as a hazardous substance under subparagraphs (a) through (f) of this paragraph, and the term does not include natural gas, natural gas liquids, liquefied natural gas, or synthetic gas usable for fuel (or mixtures of natural gas and such synthetic gas). "HAZARDOUS SUBSTANCE" shall include any mixtures of such hazardous substances with any other substances including petroleum products.

7. The term "**HAZARDOUS WASTE**" means a hazardous waste as defined in 40 C.F.R. § 261.3.
8. The term "**IDENTIFY**" means, with respect to a natural person, to set forth the person's name, present or last known business address and business telephone number, present or last known home address and home telephone number, and present or last known job title, position or business.
9. The term "**IDENTIFY**" means, with respect to a corporation, partnership, business trust or other associate of a business entity (including a sole proprietorship), to set forth its full name, address, legal form (e.g., corporation, partnership, etc.), organization, if any, and a brief description of its business.
10. The term "**IDENTIFY**" means, with respect to a document, to provide its customary business description, date, number, if any (invoice or purchase order number), the identity of the author, addressor, addressee and/or recipient, and the substance or the subject matter.
11. The term "**PERSON**" includes, in the plural as well as the singular, any natural person, firm, unincorporated associate partnership, corporation, trust or other entity.
12. The term "**POLLUTANT**" or "**CONTAMINANT**" shall include, but not be limited to, any element, substance, compound or mixture, including disease-causing agents, which after release into the environment and upon exposure, ingestion, inhalation, or assimilation into any organism, either directly from the environment or indirectly by ingestion through food chains, will or may reasonably be anticipated to cause death, disease, behavioral abnormalities, cancer, genetic mutation, physiological malfunctions (including a malfunction in reproduction) or physical deformation in such organisms or their offspring; except that the term "**POLLUTANT**" or "**CONTAMINANT**" shall not include petroleum, including crude oil or any fraction thereof which is not otherwise specifically listed or designated as a hazardous substance under subparagraphs (a) through (f) of Definition 5 above, and shall not include natural gas, liquefied natural gas, or synthetic gas of pipeline quality (or mixtures of natural gas and such synthetic gas). "**POLLUTANT**" or "**CONTAMINANT**" shall include any mixtures of such pollutant and contaminants with other substances, including petroleum products.
13. The term "**RELEASE**" shall include any spilling, leaking, pumping, pouring, emitting, emptying, discharging, injecting, escaping, leaching, dumping, or disposing into the environment, including the abandonment or discharging of barrels, containers, and other closed receptacles containing any hazardous substance or pollutant or contaminant.

Enclosure

14. The term **"SPENT MATERIAL"** is any material that has been used and as a result of contamination can no longer serve the purpose for which it was produced without processing.
15. The term **"TRANSACTION"** or **"ARRANGEMENT"** shall mean every separate agreement, act, deal, instance or occurrence.
16. The term **"YOU"** or **"RESPONDENT"** shall mean the addressee of this Information Request, the addressee's officers, managers, employees, contractors, trustees, successors, assigns, and agents.

Enclosure

Questions

The EPA Region 4 conducted inspections at the UT facilities in Macon and Byron, Georgia, to determine the facility's compliance status with the RCRA. During the inspection, the EPA found that UT facilities was storing Spent Plastic Blasting Media (SPBM), Spent Aluminum Oxide (SAO) and other spent abrasives containers in two warehouses. These spent abrasives were generated from paint stripping operation from Robins Air Force Base (RAFB) and other facilities around the nation. The EPA considers these materials as "spent material" as defined above.

1. Please provide a list of all locations (including addresses) in the southeast United States, including the following states: AL, FL, GA, KY, MS, NC, SC and TN, where UT collects and/or stores SPBM, SAO and other spent abrasives.
2. Please provide the date in which UT facilities first started receiving the SPBM, SAO and other spent abrasives at the locations listed above.
3. Please provide an inventory of the material stored at each location for the past five years, including the following information:
 - a. The date each location first received the SPBM, SAO and other spent abrasives, the number of containers per generator location, the volume of the containers, the name of originator, a description of the contents, and the type of stripping operation in which the material was generated.
 - b. If the SPBM, SAO and other spent abrasives were reused or used as an effective substitute for commercial product at these locations, please provide: the date of the treatment, the amount of material treated per location/facility/business, and the name and location of the recipient that received this material.
4. Please provide any analytical testing (i.e., pH, TCLP, VOCs) that your facilities have conducted on the SPBM, SAO and other spent abrasives that were received and stored at your locations in the southeast United States.
5. For each location provided, please describe your process of re-use or recycling of the SPBM, SAO and other abrasives. Please provide the type(s) of finished product manufactured.
6. With regard to the use of the SPBM, SAO, and other spent abrasives, please provide the following:
 - a. Provide the names, locations of the businesses and the description of the products made.
 - b. A description of the useful contribution provided by the addition of these materials to your product.
 - c. The utilization of these materials to reduce the amount of chemicals required to be utilized by your facilities.

Enclosure

7. Has UT facilities ever rejected a load of these materials or discontinued a supply source of these materials? If so, what was the basis for such rejection and how were the materials disposed of? Please provide generator names, dates, and locations for such a rejection, if applicable.
8. How does each UT location manage SPBM and/or SAO that cannot be "recycled"? If UT facilities has treated and/or sent spent blast media (i.e. SPBM and/or SAO that cannot be "recycled") to a landfill, please provide the location, date, method of treatment, and supporting analytical data documenting such disposal. If the spent blast media was sent off-site as hazardous waste, please provide supporting manifest for those shipments.
9. Please provide a narrative outlining how your facilities demonstrates that the SPBM, SAO, and other spent abrasives are valuable products to be utilized at the businesses/facilities (i.e., by paying for the material, by paying for the transportation of the material, or by utilizing the other chemicals in lieu of needing to purchase an alternative chemical, etc.)
10. If SPBM, SAO, and other spent abrasives have been exported to other countries, please provide a list of countries with the amounts (i.e., manifests or bill of laden) where the material has been exported and how the spent blast media has been used in those countries for the past five years.
11. If SPBM, SAO, and other spent abrasives have been sold to brokers or other companies in the United States, please provide a list, including the company names, contact information (telephone numbers and address) of the broker or other companies that your company provided the spent blast media to for the past five years.



July 3, 2014

**US Technology Corporation Response
to United States Environmental Protection Agency, Region 4,
June 2, 2014 Request for Information
Pursuant to Section 3007 of RCRA**

This document is provided in response to the United States Environmental Protection Agency, Region 4 ("USEPA"), June 2, 2014, Request for Information Pursuant to Section 3007 of RCRA regarding US Technology Corporation ("Information Request"). US Technology Corporation ("UST") has in good faith and in full cooperation endeavored to respond to and answer each and every request and question in the Information Request. To that end, UST is providing the following information and the enclosed documents; however, UST is not waiving any rights it may have and is, therefore, asserting certain objections to the Information Request.

Responding on behalf of UST is Raymond Williams, President of US Technology Corporation. All information was found in the records of UST. All documents are true and accurate copies.

Should the USEPA determine that the information provided is incomplete in any fashion, UST will endeavor to supplement its response, as appropriate. UST reserves the right to amend the answers and information provided.

At the outset, UST notes that its recycling of spent blast media ("SBM") for use in the manufacture of commercial products complies with all applicable laws and regulations. In particular, within Region 4, the Georgia Department of Natural Resources has determined that SBM, as used and recycled by UST, is exempt from the Georgia Rules for Hazardous Waste Management, which incorporate 40 CFR 261.2(e) by reference. (Attachment 1) UST remains committed to using SBM as an effective substitute for commercial products in a compliant manner.

A handwritten signature in black ink, appearing to read 'Raymond F. Williams', is written over a horizontal line.

Raymond F. Williams
President
US Technology Corporation

Enclosure

Questions

The EPA Region 4 conducted inspections at the UT facilities in Macon and Byron, Georgia, to determine the facility's compliance status with the RCRA. During the inspection, the EPA found that UT facilities was storing Spent Plastic Blasting Media (SPBM), Spent Aluminum Oxide (SAO) and other spent abrasives containers in two warehouses. These spent abrasives were generated from paint stripping operation from Robins Air Force Base (RAFB) and other facilities around the nation. The EPA considers these materials as "spent material" as defined above.

1. Please provide a list of all locations (including addresses) in the southeast United States, including the following states: AL, FL, GA, KY, MS, NC, SC and TN. where UST collects and/or stores SPBM, SAO and other spent abrasives:
Macon, Georgia: 380 Allied Industrial Blvd, Macon, GA 31206
Byron, Georgia: 224 Highway 49 South, Byron, GA 31008
All material received is weighed and logged into accounting. All material is stored in steel drums or supersacks inside secured buildings.
2. Please provide the date in which UST facilities first started receiving the SPBM. SAO and other spent abrasives at the locations listed above.
380 Allied Industrial Blvd, Macon, GA – 2/28/08
224 Highway 49 South, Byron, GA – 2/21/14
3. Please provide an inventory of the material stored at each location for the past five years, including the following information:
 - a. The date each location first received the SPBM, SAO and other spent abrasives, the number of containers per generator location, the volume of the containers, the name of originator, a description of the contents, and the type of stripping operation in which the material was generated.
See attached spreadsheets (Attachment 2a Macon, GA; Attachment 2b Byron, GA).
 - b. If the SPBM, SAO and other spent abrasives were reused or used as an effective substitute for commercial product at these locations, please provide: the date of the treatment, the amount of material treated per location/facility/business, and the name and location of the recipient that received this material.
The material received has not been treated.
4. Please provide any analytical testing (i.e., pH, TCLP, VOCs) that your facilities have conducted on the SPBM, SAO and other spent abrasives that were received and stored at your locations in the southeast United States.
See copies of TCLP testing (Attachment 3).
5. For each location provided, please describe your process of re-use or recycling of the SPBM, SAO and other abrasives. Please provide the type(s) of finished product manufactured.
UST does not process material at these locations.

6. With regard to the use of the SPBM, SAO, and other spent abrasives, please provide the following:
- Provide the names, locations of the businesses and the description of the products made.
 - A description of the useful contribution provided by the addition of these materials to your product.
 - The utilization of these materials to reduce the amount of chemicals required to be utilized by your facilities.

See attached spreadsheet (Attachment 4).

7. Has UST facilities ever rejected a load of these materials or discontinued a supply source of these materials? If so, what was the basis for such rejection and how were the materials disposed of? Please provide generator names, dates, and locations for such a rejection, if applicable.

UST has not rejected a load or discontinued use of these materials at the Georgia location. UST contracts for the materials and provides a specification for the allowable SBM and or SAO.

8. How does each UST location manage SPBM and/or SAO that cannot be "recycled"? If UST facilities has treated and/or sent spent blast media (i.e. SPBM and/or SAO that cannot be "recycled") to a landfill, please provide the location, date, method of treatment, and supporting analytical data documenting such disposal. If the spent blast media was sent off-site as hazardous waste, please provide supporting manifest for those shipments.

UST does not accept non-recyclable material at any location. UST is not a TSD and does not treat material at any location

9. Please provide a narrative outlining how your facilities demonstrates that the SPBM, SAO, and other spent abrasives are valuable products to be utilized at the businesses/facilities (i.e., by paying for the material, by paying for the transportation of the material, or by utilizing the other chemicals in lieu of needing to purchase an alternative chemical, etc.)

UST follows the Policy of the United States and mandates of Presidential Orders calling for all materials which can be recycled, to be recycled. UST is paid by the Federal Government and its commercial customers to recycle those materials generated which can be reused. UST, in turn, sells, pays for reuse or subsidizes the reuse dependent on the product being made.

10. If SPBM, SAO, and other spent abrasives have been exported to other countries, please provide a list of countries with the amounts (i.e., manifests or bill of lading) where the material has been exported and how the spent blast media has been used in those countries for the past five years.

No SBM has been exported from Region 4 facilities

11. If SPBM, SAO, and other spent abrasives have been sold to brokers or other companies in the United States, please provide a list, including the company names, contact information (telephone numbers and address) of the broker or other companies that your company provided the spent blast media to for the past five years.

See Attachment 4

Georgia Department of Natural Resources

2 Martin Luther King, Jr. Drive, SE, Suite 1154 East, Atlanta, Georgia 30334-9000

Chris Clark, Commissioner

Environmental Protection Division

F. Allen Barnes, Director

PHONE 404/656-7802 FAX 404/651-9425

February 19, 2010

Mr. Raymond F. Williams
President
US Technology Corporation
1446 W. Tuscarawas Street
Canton, Ohio 44702

Attachment 1

SUBJECT: Request for Regulatory Interpretation
Spent Plastic Blast Media/Sealtech Blocks

Dear Mr. Williams:

The Environmental Protection Division (EPD) has reviewed your request for our agency to issue a regulatory determination regarding the recycling of spent blast media (SBM), used as an ingredient in the manufacture of beneficial products such as Sealtech architectural concrete masonry blocks, and to determine if this media qualifies for applicable recycling exemptions under regulations promulgated under the Resource Conservation and Recovery Act. In addition, you requested that our regulatory determination specify that such exemptions continue to apply in the event such products are applied in a manner that might constitute incidental contact with the land.

Based upon the information that was submitted to EPD, we concur that the proposed use/recycle scenario that you presented, specifically, that the recycled spent blast media, when recycled as described, would be exempt from the Georgia Rules for Hazardous Waste Management under 391-3-11-.07(1) of those Rules [which incorporates 40 CFR 261.2(e)(1)(i) by reference]. This letter *does not constitute a concurrence* of opinion or any type of endorsement. Under the Georgia Rules, the generator of materials that may be hazardous waste is responsible for verifying that anyone receiving or using those materials does so in a manner that does not jeopardize its exemption from hazardous waste status.

While, based on the information submitted, it appears that there are benefits from the use of blast media in the making of the concrete masonry blocks, additional criteria must be met, including:

- Ensuring that sham recycling is not occurring, using the additional criteria set forth in the attachment to the April 26, 1989 USEPA memo from Sylvia Lowrance (copy attached). While several of the criteria have been addressed in your submittal, additional criteria, such as, ensuring that the secondary material is similar to an analogous raw material or product (does it contain Appendix VIII constituents or exhibit a hazardous characteristic that the analogous raw material/product would not, are analogous amounts of material used, etc.), ensuring there is a market for the end product, etc.

Mr. Raymond F. Williams
February 19, 2010
Page 2 of 3

- Note that the Georgia Rules additionally incorporate by reference §261.2(e)(2). Therefore, the solid waste exemption is lost if the materials are:
 - i. Used in a manner constituting disposal, or used to produce products that are applied to the land; or
 - ii. Burned for energy recovery, used to produce a fuel, or contained in fuels; or
 - iii. Accumulated speculatively; or
 - iv. Listed in paragraphs §261.2(d)(1) and (d)(2) of the 40 CFR, which are incorporated into the Georgia Rules by references.

Compliance with common building code standards such as International Building Code and Standards (IBC) Section 1807(which requires damp proofing barriers between Sealtech blocks and soil or mechanical barriers of separation such as aggregate or polymer board), American Society of Testing and Materials (ASTM) C 1372 (Standard Specification for Segmental Retaining Wall Units), and National Concrete Masonry Association (NCMA) Guide TEK 15-8A (Guide to Segmental Retaining Walls) are satisfactory demonstrations in Georgia that Sealtech blocks are not products being applied to the land or used in a manner constituting disposal.

We further take this opportunity to remind the generators, US Technology, Sealtech, their licensees and others who manage the SBM, intermediates, or products of the following:

1. Any spillage of the SBM that fails the TCLP prior to spillage, if not immediately recovered and used as a beneficial ingredient in the manufacture of the concrete masonry blocks, is hazardous waste, and must be managed as such.
2. As identified above [reference §261.2(e)(2)], Sealtech blocks that are applied to the land or used in a manner that constitutes disposal results in a loss of the solid waste exemption. Authorized licensees, installers, or others failing to comply with this provision render the exemption moot, as codified at 40 CFR 261.2(e)(2)(i).
3. As with all waste materials:
 - a. All end users of Sealtech blocks must make a hazardous waste determination on any block to be disposed of,
 - b. No block that fails the TCLP test may be disposed of in a RCRA Subtitle D or construction/demolition waste landfill.

Thank you for the information you submitted in your February 2, 2010 supplemental letter regarding the testing program U.S. Technology has in place to ensure that Sealtech blocks pass the TCLP test before they leave the manufacturing facility. End users may rely on the data maintained by U.S. Technology in lieu of independent testing, if they so desire.

Mr. Raymond F. Williams
February 19, 2010
Page 3 of 3

Please contact Jan Simmons or Renée Hudson Goodley of my staff, at 404-656-7802 if you have any questions regarding this matter.

Sincerely,

A handwritten signature in black ink, appearing to read "Mark Smith". The signature is fluid and cursive, with the first name "Mark" being more prominent than the last name "Smith".

Mark Smith, Chief
Land Protection Branch

File: Regulatory Interpretations
Variance Committee Correspondence

James I. Palmer, Jr.
Butler, Snow, O'Mara, Stephens, and Cannada
Crescent Center
6075 Poplar Avenue, Fifth Floor
Memphis, TN 38119

Lee A. DeHihns, III
Alston and Bird
1201 Peachtree Center
Atlanta, GA 30309-3424



MILLS, MILLS, FIELY & LUCAS

(855) 336 7955

LMills@MMFLlaw.com

October 15, 2014

Roy Furrh
General Counsel, MDEQ
Mississippi Department of Environmental Quality
515 East Amite Street
Jackson, Mississippi 39201
VIA EMAIL Roy_Furrh@deq.state.ms.us

Re: US Technology Proposal and Update regarding Yazoo Matters

Dear Roy,

Please confirm that MDEQ agrees to use SW 846 Method 1311 and not EPA Method 200.8 in any of the sampling and that UST may instruct Micro-Methods of the same.

Thank you. If you have any questions, please do not hesitate to contact me. Until then, I remain

Very truly yours,

MILLS, MILLS, FIELY & LUCAS

Laura L. Mills

Mills, Mills, Fiely & Lucas, LLC

ATTORNEYS AT LAW

www.MMFLlaw.com

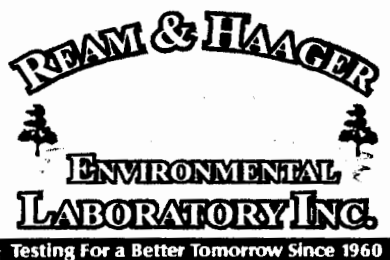
@MMFLlaw

MMFL

HI Sample Results, RCRA 8 Metals RCRA Toxicity Characteristic (TC) Exceedances		
Sample ID	Sample Location	TCLP Exceedances
H-SW-01	C-9 Pile Facility Spilt (MS/MD)	Cadmium - 3.9 mg/L
H-SW-02	D-10 Pile Facility Split	Cadmium - 5.3 mg/L
H-SW-03	E-5 Pile Facility Spilt	None
H-SW-04	East Pile Shallow (0"-3")	None
H-SW-05	East Pile Deep (12")	Cadmium - 4.1 mg/L
H-SW-06	West Side Shallow (2"-3")	None
H-SW-07	Pile 1 (LF South) Powder (2"-3")	Cadmium - 3 mg/L
H-SW-08	Pile 1 (LF South) Clod	Cadmium - 2.9 mg/L
H-SW-09	Pile 2 (LF Middle) Powder (2"-3")	Cadmium - 3.2 mg/L
H-SW-10	Duplicate of H-SW-04 East Pile Shallow (0"-3")	Cadmium - 3.3 mg/L
H-SW-11	Pile 2 (LF Middle) Clod	None
H-SW-12	Pile 3 (LF North) Powder (2"-3")	None
H-SW-13	Pile 3 (LF North) Powder Clod	Cadmium - 2.7 mg/L
H-SW-14	Landfill Runoff Area South (0-2")	None
H-SW-15	Landfill Runoff Area North (0-2")	Cadmium - 4.4
H-SW-20	Duplicate of H-SW-12 Pile 3 (LF North) Powder	Cadmium - 4

Samples collected were analyzed for Toxicity Characteristic Constituents and compared to RCRA Regulatory Standards in 40 C.F.R. § 261.24 (b), as well as comparison for both RCRA metals and PCBs to the Universal Treatment Standards (UTS) for land disposal, per 40 C.F.R. § 268.48(a).

RCRA 8 Metals	Limits (mg/L TCLP) per 40 C.F.R. § 261.24(b)	Limits (mg/L TCLP) per 40 C.F.R. § 268.48(a) (LDR)
Arsenic (As)	5 mg/L	5 mg/L
Barium (Ba)	100 mg/L	21 mg/L
Cadmium (Cd)	1 mg/L	0.11 mg/L
Chromium (Cr)	5 mg/L	0.6 mg/L
Lead (Pb)	5 mg/L	0.75 mg/L
Selenium (Se)	1 mg/L	0.57 mg/L
Silver (Si)	5 mg/L	0.14 mg/L
Mercury (Hg)	0.2 mg/L	0.025 mg/L



P.O. Box 706, 179 West Broadway, Dover, OH 44622

TEL: (330) 343-3711 FAX: (330) 343-9858

Email: rhlab@rhlab.us

Ohio EPA Chemical Certification # 4162

Ohio EPA Bacteria Certification # 893

- Certificate of Analysis -
for

US TECHNOLOGY/MS
700 INDUSTRIAL PARKWAY
PO BOX 507
YAZOO CITY, MS 39194

Final Report

Report Date: 5/29/2014

Report Number: 21127-0

Chain of Custody #: 119399

Project Name: HYDROMEX

Project Comments:

Lab ID: 14053441

Sample Type: Soil

Your Sample ID: E5-9 DAY

Date Sampled: 5/23/2014 12:37:00PM

Date Received: 5/27/2014

Collection: COMP

Method	Analyte	Result	Units	MDL/PQL	Analysis Date	Analyst
SW846_1311/6010	TCLP Cadmium	1.54	mg/L	0.01	05/28/14	CC
	TCLP Chromium	0.22	mg/L	0.01	05/28/14	CC
	TCLP Lead	0.04	mg/L	0.01	05/28/14	CC

QA/QC Manager

Results relate only to items tested. Samples tested as received. This report may not be reproduced except in full with the approval of Ream and Haager Laboratory, Inc.

Handwritten notes:
Cd - 0.11
Cr - 0.60
Pb - 0.75
(Circled signature) Cd - 0.76
Cr - 0.75

Danois, Héctor

From: Jeffery Cluck <jcluck@ustechnology.com>
Sent: Thursday, June 05, 2014 11:06 AM
To: Danois, Héctor
Cc: 'Ray Williams'; Steve_Bailey@deq.state.ms.us
Subject: RE: Contact Info

Since the bag information is more of an internal thing, I don't actually keep a running tally like that. For me to answer your question, I would have to go count the number of bags here...which I can do if necessary. Weight is the actual way we keep up with/log book everything and report it.

As of 6-5-14...
Treated/Stabilized with Cement 1,905,600 lb.
Disposed of Treated Material 1,244,001 lb.
Have Left to Treat/Stabilize 4,924,555 lb.

Also, please check your notes...I believe I miss spoke the date that we started bagging. The end of 2011 was when we started bagging and the end of 2009 was when the core samples were taken that we looked at on the map. I think I reversed these two when we were talking.

Let me know if you have any further questions.
Jeff

From: Danois, Héctor [mailto:Danois.Hector@epa.gov]
Sent: Thursday, June 05, 2014 7:26 AM
To: Jeffery Cluck
Subject: RE: Contact Info

Thanks for getting back to us with your information. I have a question; how many bags have you process and how many bags do you have in place. Or can you send me a copy of you inventory that you mention during the visit that you had it in your house?

Thanks again..

Héctor M. Danois
Environmental Engineer
South Enforcement and Compliance Section
RCRA and OPA Enforcement and Compliance Branch
US, EPA – Region 4
(404)562-8556
danois.hector@epa.gov

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From: Jeffery Cluck [mailto:jcluck@ustechnology.com]
Sent: Tuesday, June 03, 2014 3:53 PM
To: Lamberth, Larry; Danois, Héctor; daval_phebe@bah.com
Cc: Steve_Bailey@deq.state.ms.us
Subject: Contact Info

Sirs and Ma'am,
Per our conversation during your visit today, below is my contact information.

Sincerely,

Jeffery Cluck
Project Manager

US Technology Corp.- MS
700 Industrial Parkway
P.O. Box 507
Yazoo City, MS 39194

Mobile: (479) 208-0257
jcluck@ustechnology.com
www.ustechnology.com



P.O. Box 706, 179 West Broadway, Dover, OH 44622

TEL: (330) 343-3711 FAX: (330) 343-9858

Email: rhlab@rhlab.us

Ohio EPA Chemical Certification # 4162

Ohio EPA Bacteria Certification # 893

**- Certificate of Analysis -
for**

**US TECHNOLOGY/MS
700 INDUSTRIAL PARKWAY
PO BOX 507
YAZOO CITY, MS 39194**

Project Comments: * RUSH *****

Final Report

Report Date: 6/11/2014

Report Number: 21413-0

Chain of Custody #: 119402

Project Name: HYDROMAX

Lab ID: 14061143

Sample Type: Soil

Your Sample ID: C9-5DAY

Date Sampled: 6/3/2014 10:44:00AM

Date Received: 6/5/2014

Collection: COMP

Method	Analyte	Result	Units	MDL/PQL	Analysis Date	Analyst
SW846_1311/6010	TCLP Cadmium	<0.01	mg/L	0.01	06/10/14	CC
	TCLP Chromium	0.23	mg/L	0.01	06/10/14	CC
	TCLP Lead	0.02	mg/L	0.01	06/10/14	CC

Lab ID: 14061144

Sample Type: Soil

Your Sample ID: D-10-3DAY

Date Sampled: 6/3/2014 11:01:00AM

Date Received: 6/5/2014

Collection: COMP

Method	Analyte	Result	Units	MDL/PQL	Analysis Date	Analyst
SW846_1311/6010	TCLP Cadmium	<0.01	mg/L	0.01	06/10/14	CC
	TCLP Chromium	0.27	mg/L	0.01	06/10/14	CC
	TCLP Lead	0.02	mg/L	0.01	06/10/14	CC

Lab ID: 14061145

Sample Type: Soil

Your Sample ID: E5-19DAY

Date Sampled: 6/3/2014 11:36:00AM

Date Received: 6/5/2014

Collection: COMP

Method	Analyte	Result	Units	MDL/PQL	Analysis Date	Analyst
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Client: US TECHNOLOGY/MS

Final Report

Report Date: 6/11/2014

Report Number: 21413-0

Lab ID: 14061145

Date Sampled: 6/3/2014 11:36:00AM

Sample Type: Soil

Date Received: 6/5/2014

Your Sample ID: E5-19DAY

Collection: COMP

Method	Analyte	Result	Units	MDL/PQL	Analysis Date	Analyst
SW846_1311/6010	TCLP Cadmium	<0.01	mg/L	0.01	06/10/14	CC
	TCLP Chromium	0.26	mg/L	0.01	06/10/14	CC
	TCLP Lead	0.02	mg/L	0.01	06/10/14	CC

QA/QC Manager

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119402



March 7, 2014

Mr. Stephen Bailey
OPC/Envir. Compliance & Enforcement
Mississippi Department of Environmental Quality
515 East Amite Street
Jackson, MS 39201

Re: Approval request for Yazoo final Remediation Process

Dear Mr. Bailey,

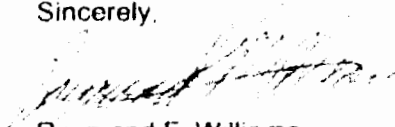
U S Technology Corp requests concurrence and approval for the stabilization and disposal procedures outlined in the attached "Treatment and Disposal Workplan" with attachments. This plan provides details for the stabilization of the material and disposal in an approved landfill as approved in the Site Remediation Plan of June 8, 2011. The timeline for this plan, as detailed in the attachments, is six months including rain contingency. This plan would be incorporated into an Agreed Order which would hold any and all fees in abeyance as well as extinguish the current NOV.

A much preferred alternative would be to treat and test the material to UTS standards and place the material back into the pits, which would shorten the timeline by approximately two months and would provide a great benefit to the current landowner. However, in our meeting March 4, 2014 you indicated that alternative would not be considered as viable by MDEQ.

Upon receipt of your written approval we will immediately proceed to complete the remediation and move to the final phase of monitoring wells.

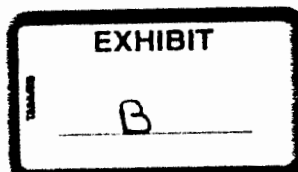
Please contact me if there are any questions on the plan proposed.

Sincerely,


Raymond F. Williams
President

CC: Roy Furrh
CC: Laura Mills

4200 Munson St. NW Canton, OH 44718 - Phone: 330-455-1181 Fax: 330-455-1191



Treatment and Disposal Workplan

As a result of the remediation activities that have taken place at the former Hydromex Inc. facility, located at 700 Industrial Parkway, Yazoo City, Mississippi, we have approximately 3,500 tons of recovered spent blast media in super sacks that we propose to be stabilized/treated with Portland Cement and disposed of at an MDEQ approved facility (sect. 1.0 para. 4 Site Remediation/Recycling Plan).

Stabilization/treatment of the 3,500 tons of recovered media currently on site will be accomplished by adding the appropriate amount of Portland Cement to meet the landfill's criteria for Cadmium, Chromium, and Lead, and sufficient water to hydrate the cement. The treated product will be stored in stockpiles while the cement is allowed to hydrate. Samples will be collected from each stockpile and submitted to an analytical laboratory for analysis. Once test results are received that a stockpile meets the landfill's criteria, that stockpile will be loaded on to dump trucks and transported to the approved facility for disposal.

Treatment Plan

Treatment will be done inside the existing building and performed in batches to ensure a more thorough mixing of the cement with the recovered media and to aid in the handling of the treated product as the cement solidifies. Each batch will consist of approximately 10,000 lb. of recovered media and 1,000 lb. of Portland Cement. Treatability testing previously conducted indicates that this ratio of cement to media will meet the landfill's criteria, but this ratio may be altered during the treatment process if actual field testing indicates differently. The treated batches will be produced by using a large weigh hopper, a conveyor belt, a small weigh hopper, a spray nozzle, a mixing container, and a holding container. A sketch of the equipment layout is included for reference.

Each batch will begin with the documentation of the super sack ID #'s that are to be treated in that batch. These ID #'s also include the weight of each super sack, which will be added up to determine the appropriate amount of Portland Cement needed for the batch. A forklift will be used to lift super sacks over the large weigh hopper so the recovered material can be emptied into it. Likewise, a forklift will be used to lift bags of Portland Cement over the small weigh hopper so the appropriate amount can be emptied into it. Once the appropriate amount of Portland cement is known, the minimum amount of water to hydrate that cement can be determined. According to Treval Powers, "Non-evaporable Water Content of Hardened Portland-Cement Paste", Portland Cement requires 26% of its weight in water to be fully hydrated. Due to losses in the mixing process and to insure complete hydration, we will add 30% water/cement or approximately 1 gallon of water for each 28 pounds of cement. Both the large weigh hopper with the recovered media and the small weigh hopper with the Portland Cement sit over and empty on to an inclined conveyor belt. The conveyor belt moves at a constant speed carrying the two components up to the mixing container. The large weigh hopper drops recovered media onto the conveyor belt at a consistent rate with the aid of

a hopper mounted vibrator. The small weigh hopper is positioned down stream and drops Portland Cement on top of the recovered media that is being carried by the conveyor. The mixer operator monitors the scale readings of both the large weigh hopper and small weigh hopper to insure the proper amount of media to cement ratio is being achieved. The small weigh hopper with Portland Cement has a valve that allows the flow of the cement to be increased or decreased by the mixer operator to maintain the proper ratio. The inclined conveyor belt carries the recovered media and the Portland Cement up to the top of the mixing container. As the two materials fall into the mixing container, water is added via a spray nozzle to hydrate the Portland Cement. A flow meter and flow control valve for the water spray nozzle are located at the mixing control station. This water flow meter and valve allow the mixing operator to monitor and adjust the amount of water being added to the batch to insure proper hydration of the Portland Cement. The mixing container is cylindrical in shape and roughly 3 foot in diameter by 12 foot long (approx. 85 cu.ft.) with mixing paddles lining the inside. The mixing container rotates and works on the same idea as a concrete mixing truck. The material inside the mixing container is mixed/folded an estimated 14 times before exiting the mixing container. Upon exiting the mixing container, the treated batch is emptied into the batch holding container. The batch holding container is a metal box roughly 9 foot by 9 foot that holds the approximately 7 cubic yards of treated product until a front-end loader is used to move the treated product to its designated stockpile. Once a batch is completed, the actual quantities of Portland Cement and water used are recorded next to the calculated amounts needed on the batch documentation sheet.

This semi-automated treatment process is somewhat different from the currently accepted practice of using a roll-off container and backhoe to mix cement into a material for treatment/stabilization and the 6.0 Stabilization/Solidification of Spent Media process laid out in the Site Remediation/Recycling Plan. However, this treatment process is more reliable and better suited to the instant materials. The common practice of placing "dirt" in a roll-off container, putting the required amount of cement on top of said "dirt", and using a backhoe or track-hoe to mix the two components together like a large bowl of cookie dough is less controlled. It is difficult to produce a well homogenized product from top to bottom, and side to side edges. The proposed treatment process will yield a thoroughly homogenized treated material in less time. The common practice method is more appropriate for a small project of a few hundred cubic yards, but on a project this size where we are looking at treating over 4,000 cubic yards of material, the more thorough process is justified. If we were required to treat/stabilize by the common practice method on this project, it would triple the time to complete and allow for potential hot spots in the final material.

Sampling Plan

Each stockpile will be given a unique number and visible numbered flags will be used to identify the respective piles. Each stockpile will remain segregated from the other until disposal. This will be achieved by building partitions between the stockpile locations to prevent migration of material from one pile to another. Four of these storage bunks will be created inside the existing building and three will be created outside on existing

concrete pads. A sketch of the stockpile locations is included for reference. The stockpiles that are stored outside will be covered with tarps and storm water controls implemented. The maximum stockpile size will be 120 cubic yards to simplify sample collection. Each sample collected can represent a maximum of 120 cubic yards of treated product (sect. 6.0 para. 2 Site Remediation/Recycling Plan).

Each stockpile will be allowed to cure for 48 hours before samples are collected. This will allow the Portland Cement time to hydrate before sampling. A sample will be composed of five sub-samples collected randomly from the stockpile. The sub-samples will be placed in a stainless steel bowl and thoroughly mixed until well homogenized (sect. 4.0 para 4 Site Remediation/Recycling Plan). A representative sample will be collected and sent to the contract analytical laboratory to be TCLP tested for Cadmium, Chromium, and Lead using EPA Test Method 1311. The chosen analytical laboratory for this plan is Ream & Haager Laboratory, Dover, OH. Samples will be over-nighted under completed chain of custody form and test results will be received 5 working days later.

Disposal Plan

Once test results have been received, indicating that a stockpile has met the landfill's criteria of 1 mg/l Cadmium, 5 mg/l Chromium, and 5 mg/l Lead, that stockpile will be loaded onto dump trucks using a front-end loader and transported to the selected facility approved by MDEQ. Our selected facility for this plan is Canton Sanitary Landfill, Canton, MS. Canton Landfill was chosen because prior to this plan, they were approved by MDEQ to accept the non-recyclable/non-usable products that were onsite. Each truck load of treated product will be logged before leaving the project site and a shipping manifest will accompany each load. A copy of a daily log sheet, shipping manifest, and landfill receipt are included for reference.

Monthly Reporting

At the beginning of each month, a report will be sent to MDEQ outlining the previous month's activity. The report will include the monthly and cumulative amount of recovered media treated and the monthly and cumulative amount of treated product disposed of. Landfill disposal receipts will be provided at MDEQ's request.

Workplan Timeline

The workplan that has been laid out above can treat/stabilize 50 tons of recovered media a day. With 3,500 tons of recovered media to treat, this yields 14 weeks of straight processing. We will need two weeks to prep the project site and set-up the processing equipment. With a one week ramp-up schedule, that puts us sending the first truck load of treated product to the landfill three and a half weeks after official approval of this plan. The last truck load of treated product will be one week after processing is complete. Once completed, we will need two weeks to remove equipment and decontaminate the site for clean closure. Even though the mixing process will be conducted inside, weather will still play a key roll in this plan. Rain will prevent us from moving treated product

batches to the outside stockpiles. If it is raining, we can't load dump trucks because "the load will be checked to insure it contains no free liquids" (sect. 4.0 para. 3 Site Remediation/Recycling Plan). Due to this and standard delays of running equipment, 4 weeks of contingency are requested. All things considered, we request a deadline 6 months from the date of MDEQ official approval of this Treatment & Disposal Workplan.

Cost Breakdown

3,500 ton recovered media => 50 ton/day = 70 days = 14 weeks to treat/stabilize (4 months)

@ 10% ratio => 350 ton cement

@ 30% ratio => 105 ton (25,301 gal) water

Total Haul/Dispose = 3,955 ton

Disposal @ \$22/ton = \$87,010

Hauling @ \$9/ton = \$35,595

Cement @ \$178/ton = \$62,300

Water @ \$110/month = \$440

Labor (3 guys) @ \$1,625/week = \$26,000

Electric @ \$250/month = \$1000

Equipment Rental (loader, 2 backhoes, bobcat, weigh hopper) @ \$6,000/month = \$24,000

Mixing Setup = \$1,000

Fuel 1,500 @ \$3.50/gal = \$5,250

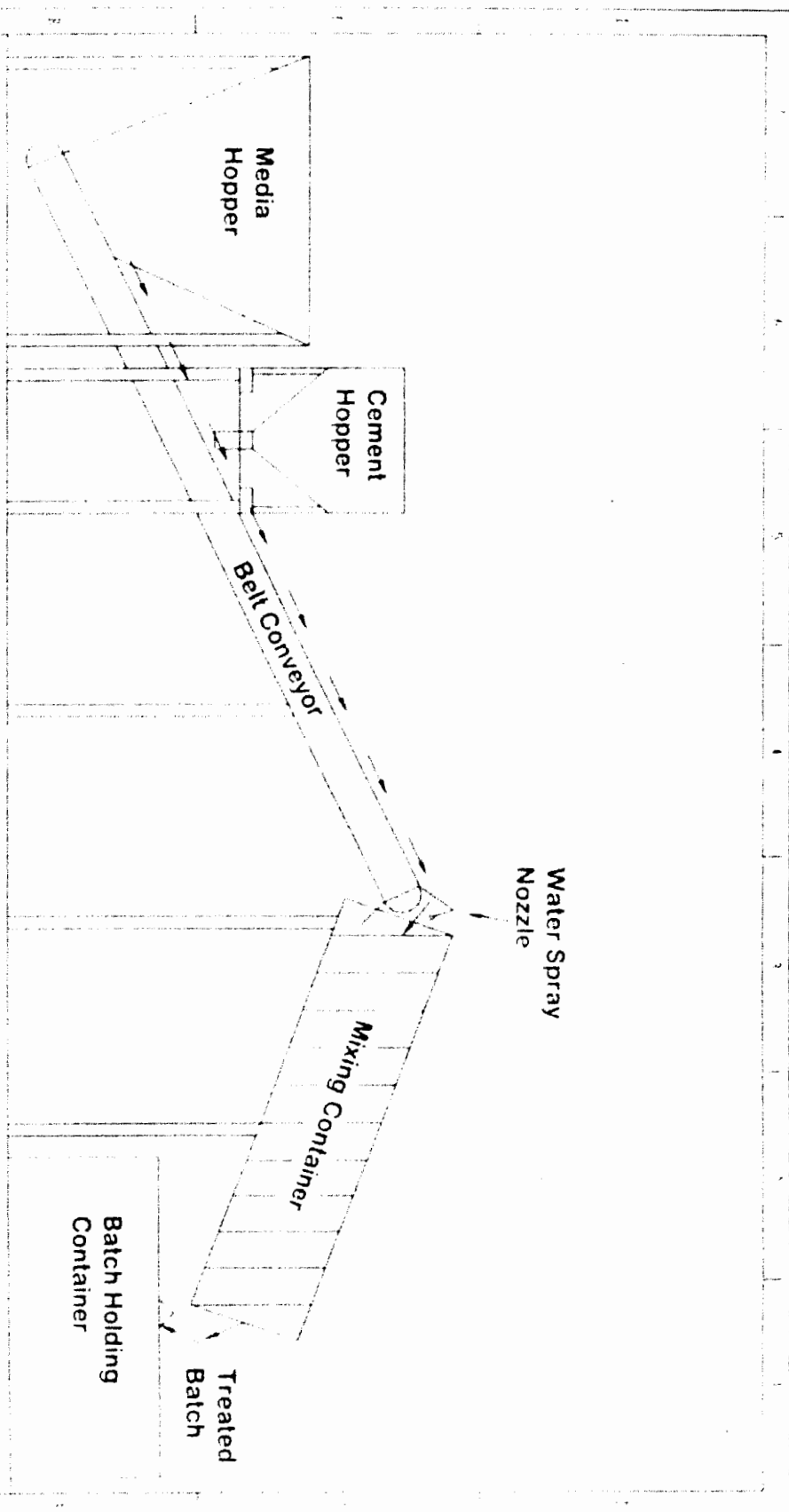
General Supplies = \$2,000

Shipping & Testing @ \$170 ea = \$8,500

Sub Total = \$253,095

10% Tax/Contingency = \$25,310

Total = \$278,405



US Technology Corp.

TruSonic Mixing System

Scale of the equipment	Batch 5000 lbs	Batch 1000 lbs
Control System	Batch 5000 lbs	Batch 1000 lbs



Daily Landfill Disposal Report

Date: 1-29-14

Load Number	Manifest Number	Material Type	Tare Weight "Empty" (pounds)	Gross Weight "Loaded" (pounds)	Initials	Net Weight (pounds)
1	71	Dirt			SS	50,300
2						
3						
4						
5						
6						
7						
8						
9						
10						
11						
12						
13						
14						
15						
16						
17						
18						
19						
20						

Total Net 50,300 *jk*

ent
2-5-14
jk

**CITY OF CANTON
SANITARY LANDFILL
NON-HAZARDOUS & ASBESTOS MANIFEST
GENERATOR**

MANIFEST# 71
GENERATOR V. J. ...
ADDRESS ...
PHONE ... I.D.# ...

DESCRIPTION OF MATERIALS	PROFILE NUMBER	TOTAL QUANTITY	UNIT OF MEASURE	CONTAINER TYPE

I hereby certify that the above-described materials are not hazardous wastes as defined by 40 CFR, Part 261 or any applicable state law, have been fully and accurately described, classified and packaged, and are in proper condition for transportation according to applicable regulations.

Generator Agent Print Name ... Signature ... Date 1-29-14
TRANSPORTER

TRANSPORTER NAME ...
ADDRESS ...
PHONE ... DRIVER ...
SIGNATURE ...

OPERATOR INFORMATION

OPERATOR'S NAME ... SIGNATURE ...
PHONE NUMBER ...
OPERATOR'S ADDRESS ...
SPECIAL HANDLING INSTRUCTIONS ...

DESTINATION

SITE NAME ...
ADDRESS ...

AUTHORIZED AGENT (PRINT) ... SIGNATURE ... DATE ...

NAME AND ADDRESS OF
RESPONSIBLE AGENCY MS DEQ BOX10385, JACKSON, MS 39289
FRIABLE NON-FRIABLE

Canton Sanitary Landfill
303 Soldier Colony Road
Canton, MS 39046

000181 US Technology Corp
4200 Munson St. NW
Canton OH 44718

#71

01 066180

LaBroski

01/29/14 01/29/14 09:35 09 54 U.S. TECHN

MADISON

Scale 1 Gross Wt.	83940	LB
Scale 1 Tare Wt	33620	LB
Net Weight	50320	LB

Inbound - Charge ticket

25.16	TON INERT MATERIAL	26.00	654.16	6.00	660.16
-------	--------------------	-------	--------	------	--------

Operating hours Monday - Friday 7AM to 4PM

This is to certify that this load does not contain any
hazardous materials, non treated medical waste or liquids of
any type. Thanks and Have a Great Day!!

660.16

Small
2-7-14
/c

BEFORE THE MISSISSIPPI COMMISSION ON ENVIRONMENTAL QUALITY

In re: Matter of
US Technology Corporation
1446 Tuscarawas St. West
Canton, OH 44702

Order No.

5611 09

The Mississippi Commission on Environmental Quality ("Commission"), the Mississippi Department of Environmental Quality ("MDEQ") and US Technology Corporation, ("UST") now enter the following agreement pursuant to the Uncontrolled Site Voluntary Evaluation Program ("Program") created in Miss. Code Ann. §17-17-54(2) (Supp. 1996), as follows:

1. UST is the former operator pursuant to an Agreed order at the former Hydromex site ("site") located at 700 South Industrial Parkway in Yazoo City, Mississippi. MDEQ has reason to believe that conditions which warrant oversight by MDEQ exist at the site. UST has transmitted information regarding these conditions in the form of final cleanup documents, dated May 27, 2009.
2. The site is an uncontrolled site within the purview of Miss. Code Ann. §17-17-54. UST desires to submit this site for participation in the Program. By this agreement, MDEQ accepts the site for participation in the Program.
3. UST agrees to the following terms and conditions of participation in the Program:
 - (a) UST will pay all costs of MDEQ's actions associated with MDEQ's administration and evaluation of the site. For the first twelve months in which this Agreed Order is effective, these costs will be calculated at the rate of \$100.00 per hour for each hour of MDEQ staff or subcontractor time spent reviewing, assessing, investigating, reporting on, taking administrative action in regard to, analyzing or studying the site or the information and plans regarding the site submitted by UST, plus MDEQ's actual costs (above and beyond staff/subcontractor time) for obtaining and analyzing split samples and additional samples deemed necessary by MDEQ. Analytical costs will be charged as shown on the relevant schedule of analytical costs, found in Section 9 of this order. MDEQ reserves the right to increase or decrease the per-hour and analytical cost schedule at any time after the first twelve months in which this Agreed Order is effective. In case of such an increase or decrease, MDEQ will notify UST in writing of the new cost schedule, and the new cost schedule will become effective forty-five

EXHIBIT

C

days after the date of the written notice to UST. If UST determines to discontinue its participation in the Program for the site after a change by MDEQ in the per-hour and analytical cost schedule, UST may terminate its participation in the program as is stated in paragraph 8, below.

- (b) MDEQ will send an invoice to UST on a monthly basis stating the program costs assigned to the site that have not been paid prior to the date of invoice by UST, and UST will pay that amount to MDEQ, for deposit into the Uncontrolled Site Evaluation Trust Fund ("Fund"), within 30 days following the invoice date.
- (c) UST will be liable for the payment of all invoiced amounts described in subparagraph 3(b), above.

4. MDEQ will expedite review and evaluation of the investigative assessments, work plans, remedial investigation plans, scopes of work, and remediation design plans submitted by UST regarding the site.

5. This agreement is not entered in lieu of any penalty or enforcement action that MDEQ or the Commission may otherwise take in regard to the site or against UST. MDEQ and the Commission reserve the right to take any and all administrative and/or legal actions they deem necessary in regard to the site and/or against UST. This agreement does not represent the settlement or release of any liability of UST for any action, inaction or property condition. UST neither admits nor denies liability regarding the environmental condition of the site. MDEQ accepts no responsibility by entering this agreement for activity taken at the site or for the past, present or future condition of or contamination present at the site.

6. If any part of any amount invoiced to UST by MDEQ under this agreement is not paid within thirty days after the due date (sixty days after the date of the invoice), a penalty of up to twenty-five percent of the amount due may be imposed by further order of the Commission and added thereto pursuant to Miss. Code Ann. §17-17-54(4). If MDEQ is required to pursue legal action to collect fees incurred, reasonable attorneys' fees and costs may be assessed against the nonpaying party.

7. MDEQ may suspend immediately any activities or actions related to the administration or evaluation of the uncontrolled site or sites that are the subject of this agreement if UST fails to meet any condition or requirement of or violates any of the following: (1) This agreed order or any other order of the Commission pertaining to the site to be evaluated pursuant to this Agreed Order; (2) Miss. Code Ann. §17-17-54 (Supp. 1996); (3) any rule or regulation promulgated by the

US Technology Corporation Agreed Order
Page No. 3

Commission, or (4) any permit issued by the Mississippi Environmental Quality Permit Board.

8. Either UST or MDEQ may terminate this agreement upon thirty days prior written notice to the other party. The effective date of the termination will be the thirtieth day after receipt by either party of a written notification of termination. Within thirty days of the effective date of termination, MDEQ will deliver to UST an invoice for all work accomplished prior to the effective date of termination for which UST previously has not remitted payment. UST will pay the invoice amount to MDEQ, for deposit into the Uncontrolled Site Evaluation Trust Fund ("Fund"), within 30 days following the invoice date. As of the effective date of termination, MDEQ will cease the expedited review of the site, and MDEQ thereafter will determine whether and when to resume review of site information within the normal time frame of the MDEQ uncontrolled sites program.

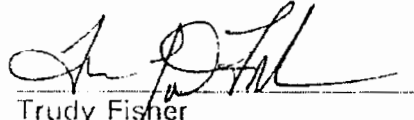
9. Schedule of Analytical Costs

Analytical Parameters	Price per Sample
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Heavy Metals - Individual	\$ 40
Volatile Organic Compounds	\$ 225
BTEX	\$ 60
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PAHs	\$ 150
Pesticides	\$ 275
Herbicides	\$ 275
Dioxins	\$ 1000
PCBs	\$ 125
TCLP Metals	\$ 260
TCLP VOCs	\$ 175
TCLP SVOCs	\$ 340
TCLP Pesticides	\$ 140
TCLP Herbicides	\$ 150
TPH-GRO	\$ 90
TPH-DRO	\$ 125
COMPOUNDS - NOT LISTED	**

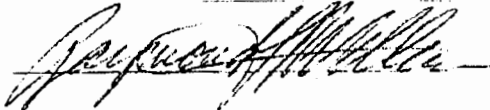
** For those compounds that are not listed, the price will be negotiated on a site-specific basis.

US Technology Corporation Agreed Order
Page No. 4

SO AGREED AND ORDERED, this the 23 day of July,
2009.


Trudy Fisher
Executive Director
Mississippi Commission on
Environmental Quality

AGREED, this the 9th day of July, 2009.

BY: 

TITLE: Raymond Williams, President
US Technology Corporation

STATE OF OHIO

COUNTY OF STARK

PERSONALLY appeared before me, the undersigned authority in and for the
jurisdiction aforesaid, the within named Raymond Williams who first being
duly sworn, did state upon his/her oath and acknowledge to me that he/she is the
President of US Technology Corporation and is authorized by that Corporation
to sign this Agreement and to enter this Agreement on behalf of US Technology.

SWORN TO AND SUBSCRIBED BEFORE ME, this the 9th day of
July, 2009.

MY COMMISSION EXPIRES:

July 28, 2013

NOTARY PUBLIC





JILL L. ALDRIDGE
Notary Public, State of Ohio
My Commission Expires 7/28/2013



Office of the Deputy General Counsel

DEPARTMENT OF THE AIR FORCE

Arlington, Virginia 22203



MEMORANDUM IN SUPPORT OF THE EXTENSION OF THE DEBARMENTS OF:

HYDROMEX, INC.
DENNIE PRIDEMORE

On April 18, 2006, the Air Force debarred Hydromex, Inc. (Hydromex) and Dennie Pridemore (Pridemore) (collectively "Respondents") from Government contracting and from receiving, directly or indirectly, the benefits of federal assistance programs for a period of three years, ending January 16, 2009.

On June 18, 2008, the Air Force proposed to extend the debarments of Hydromex and Pridemore from Government contracting and from directly and indirectly receiving the benefits of federal assistance programs. These actions were initiated pursuant to Federal Acquisition Regulation (FAR) Subpart 9.4.

By correspondence received July 14, 2008, Pridemore, *pro se* and on behalf Hydromex,¹ submitted matters and arguments in opposition to the proposed extension of the debarments. I have read and carefully considered the submission and all of the information in the administrative record (the record).

INFORMATION IN THE RECORD

Information in the record establishes by a preponderance of the evidence that at all times relevant hereto:

1. Hydromex was a Mississippi business engaged in the business of mix waste recycling.
2. Pridemore was the president and founder of Hydromex.
3. In August 2000, Pridemore signed an agreement, on behalf of Hydromex, with another company to recycle its hazardous waste, using the hazardous waste as raw materials in the manufacture of new, marketable products. The contract provided that, "the abrasive material . . . will be used in its entirety as an ingredient in the manufacture of a product for sale, and that the material will not be . . . incinerated or disposed of, and that the product produced will be nonhazardous."

¹ In his *pro se* submission Pridemore does not specifically state he is representing the company as well as himself. Primarily he writes in the first person but does reference "the company" so it appears he is offering the arguments and matters in opposition on behalf of Hydromex as well as himself. I have accepted the submission as if Pridemore was representing both Respondents.

4. In December 2000, Pridemore signed a lease for 13.5 acres of land in Mississippi to use as a site on which Hydromex would receive and recycle hazardous waste (the Hydromex site).
5. Starting in 2000 and continuing to the end of 2002, Pridemore accepted millions of pounds of hazardous waste at the Hydromex site. Throughout his management of Hydromex, Pridemore falsely represented to regulatory officials that Hydromex was exempt under federal and state laws pertaining to the storage, treatment, and disposal of hazardous waste. The Hydromex site was not exempt because it has not issued permits to store, treat, or dispose of hazardous waste.
6. Between 2000 and the end of 2002, Pridemore authorized Hydromex employees to mix tons of hazardous waste with cement and to make blocks. Pridemore represented to regulatory officials that the blocks manufactured from hazardous waste were useful and marketable, when in fact they were neither. These blocks were exposed to the elements, easily disintegrated, and leached out fluids when it rained. Pridemore never sold any of these blocks.
7. Between 2000 and the end of 2002, Pridemore instructed Hydromex employees to excavate trenches on the Hydromex site and to dispose of the hazardous waste. The excavated trenches filled with the hazardous waste were then capped with concrete. Pridemore falsely represented to regulatory officials that the waste buried in the trenches was not hazardous waste and that the pads constituted a useful product.
8. Between December 20, 2001 and January 2003, Pridemore knowingly failed to comply with the recycling exemption under federal and state law and knowingly caused millions of pounds of hazardous waste to be stored at the Hydromex site, a facility that did not have a permit to store hazardous waste.
9. Between December 20, 2001 and January 2003, Pridemore knowingly caused millions of pounds of hazardous waste to be disposed of on the Hydromex site, a facility that did not have a permit to dispose of hazardous waste.
10. On or about May 29, 2002 and again on or about November 7, 2002, Pridemore knowingly and willfully made false statements to regulatory officials and federal investigators that he was properly and legally recycling hazardous waste received at the Hydromex site and that he was therefore in compliance with the exemption from hazardous waste regulation.
11. On April 18, 2006, the Air Force debarred Hydromex and Pridemore until January 16, 2009, based on other conduct related to this scheme to evade laws pertaining to hazardous waste regulation. The false statements alleged in this memorandum as bases for the extension of the proposed debarment were not known to the Air Force Suspending and Debarment Official in 2006, at the time of the original debarment. Further, the convictions entered against Pridemore since the original debarment require the extensions of those debarments.
12. On December 20, 2006, an indictment was filed in the United States District Court for the Southern District of Mississippi Western Division (USDC-SDM), charging Pridemore with four counts of knowingly causing hazardous waste to be stored or disposed at a facility that did not have the permits for storage or disposal of hazardous waste, in violation of 42 U.S.C. § 6928(d)(2)(A), and two counts of knowingly and willfully making materially false,

fictitious and fraudulent statements in matters concerning the United States Government in violation of 18 U.S.C. § 1001.

13. Pursuant to his plea of guilty to the facts as specified in Counts 1 through 6 of the indictment, judgment was entered against Pridemore on February 21, 2008, in the USDC-SDM. He was sentenced to 41 months imprisonment followed by 3 years of supervised release, and an assessment fee of \$600.00.

ANALYSIS

In addressing the specific paragraphs of the proposed extension of the debarments, Pridemore admits that, 1) he was the president and founder of Hydromex (Information in the Record (IITR), ¶2), 2) on April 18, 2006, he and Hydromex were debarred until January 16, 2009 (IITR, ¶11), 3) on December 20, 2006, he was indicted on six counts as stated (IITR, ¶12) (but claims the indictment was based on lies), and 4) that he pled guilty to the indictment and was sentenced on February 21, 2008 (IITR, ¶12). Pridemore's admissions to the facts as stated in the indictment and restated above, and his subsequent conviction pursuant to his guilty plea to all six counts of the indictment, provide the evidence and bases for the extended debarments.

Notwithstanding the above admissions and his guilty plea, Pridemore does put forth in the submission an argument that he had no "agreement" to do work for the Air Force or any other Government agency. However, in the submission summary, Pridemore admits to being a Government subcontractor by stating, "... any dealings I had with the Government was [sic] through Ray Williams of U.S. Technology." The record reflects that U.S. Technology was a prime contractor for the Government, and that Hydromex was its subcontractor. The Respondents are "contractors" as defined in FAR 9.403.

The Respondents' other arguments presented are, in essence, a recant of Pridemore's guilty plea.² The evidence in this matter is based on Pridemore's conviction and is not subject to dispute. He pled guilty to the facts as specified in the indictment and reflected in paragraphs 3 through 10 above. The Respondents' submission offers no evidence as to their present responsibility and does not present any mitigating factors for consideration.

I find by the preponderance of the evidence that the Respondents are not presently responsible contractors. In consideration of the egregious misconduct in this case, I have determined that protection of the government's interest requires extensions of the previously imposed debarment periods greater than the three years generally imposed under the FAR.

FINDINGS

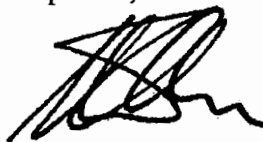
1. The conviction of Pridemore provides a separate basis to extend his debarment, pursuant to FAR 9.406-2(a)(3) and (5).

² Pridemore asserts he was "forced" to sign the plea agreement because his public defender was either incompetent, or corrupt, or both, and claims he's an innocent person.

2. The conduct of Pridemore and Hydromex is of so serious and compelling a nature that it affects their present responsibility to be Government contractors or subcontractors and, pursuant to FAR 9.406-2(c), provides separate bases to extend their debarments.
3. The fraudulent, criminal, and seriously improper conduct of Pridemore, as an officer, director, shareholder, partner, employee, or other person associated with a contractor, may be imputed to Hydromex pursuant to FAR 9.406-5(a), as his misconduct occurred in connection with his performance of duties for or on behalf of Hydromex. The imputation of Pridemore's fraudulent, criminal, and seriously improper conduct provides a separate basis to extend Hydromex's debarment.
4. The seriously improper conduct of Hydromex may be imputed to Pridemore pursuant to FAR 9.406-5(b), because as an officer, director, shareholder, partner, employee, or other person associated with a contractor, he participated in, knew of, or had reason to know of Hydromex's seriously improper conduct. The imputation of Hydromex's seriously improper conduct provides a separate basis to extend Pridemore's debarment.
5. Pridemore and Hydromex are affiliates, as defined in FAR 9.403 ("Affiliates"), because directly or indirectly Pridemore controls or has the power to control Hydromex. Pursuant to the FAR 9.406-1(b), the affiliation of Pridemore and Hydromex provides a separate basis for Hydromex's debarment.

DECISION

Pursuant to the authority granted by FAR Subpart 9.4, Defense FAR Supplement, Subpart 209.4 and 32 C.F.R. Section 25, and based on the evidence contained in the administrative record and findings herein, the debarments of Hydromex, Inc. and Dennie Pridemore are extended for 5 years from April 17, 2009, the date that the current debarments would have expired. The debarment shall terminate on April 16, 2014.



STEVEN A. SHAW
Deputy General Counsel
(Contractor Responsibility)

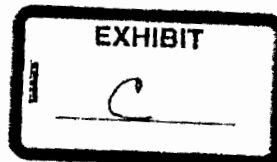
BEFORE THE MISSISSIPPI COMMISSION ON ENVIRONMENTAL QUALITY

In re: Matter of
US Technology Corporation
1446 Tuscarawas St. West
Canton, OH 44702

Order No. 5611 09

The Mississippi Commission on Environmental Quality ("Commission"), the Mississippi Department of Environmental Quality ("MDEQ") and US Technology Corporation, ("UST") now enter the following agreement pursuant to the Uncontrolled Site Voluntary Evaluation Program ("Program") created in Miss. Code Ann. §17-17-54(2) (Supp. 1996), as follows:

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2. The site is an uncontrolled site within the purview of Miss. Code Ann. §17-17-54. UST desires to submit this site for participation in the Program. By this agreement, MDEQ accepts the site for participation in the Program.
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days after the date of the written notice to UST. If UST determines to discontinue its participation in the Program for the site after a change by MDEQ in the per-hour and analytical cost schedule, UST may terminate its participation in the program as is stated in paragraph 8, below.

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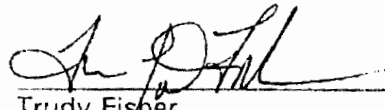
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TCLP Herbicides	\$ 150
TPH-GRO	\$ 90
TPH-DRO	\$ 125
COMPOUNDS - NOT LISTED	**

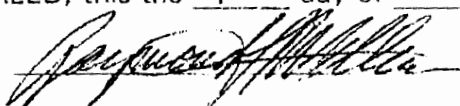
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US Technology Corporation Agreed Order
Page No. 4

SO AGREED AND ORDERED, this the 23 day of July,
2009.


Trudy Fisher
Executive Director
Mississippi Commission on
Environmental Quality

AGREED, this the 9th day of July, 2009.

BY: 
TITLE: Raymond Williams, President
US Technology Corporation

STATE OF Ohio

COUNTY OF STARK



PERSONALLY appeared before me, the undersigned authority in and for the jurisdiction aforesaid, the within named Raymond Williams who first being duly sworn, did state upon his/her oath and acknowledge to me that he/she is the President of US Technology Corporation and is authorized by that Corporation to sign this Agreement and to enter this Agreement on behalf of US Technology.

SWORN TO AND SUBSCRIBED BEFORE ME, this the 9th day of
July, 2009.

MY COMMISSION EXPIRES:

July 28, 2013

NOTARY PUBLIC



JILL L. ALDRIDGE
Notary Public, State of Ohio
My Commission Expires 7/28/2013

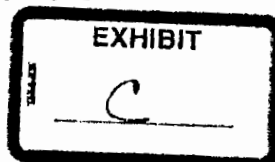
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6. If any part of any amount invoiced to UST by MDEQ under this agreement is not paid within thirty days after the due date (sixty days after the date of the invoice), a penalty of up to twenty-five percent of the amount due may be imposed by further order of the Commission and added thereto pursuant to Miss. Code Ann. §17-17-54(4). If MDEQ is required to pursue legal action to collect fees incurred, reasonable attorneys' fees and costs may be assessed against the nonpaying party.

7. MDEQ may suspend immediately any activities or actions related to the administration or evaluation of the uncontrolled site or sites that are the subject of this agreement if UST fails to meet any condition or requirement of or violates any of the following: (1) This agreed order or any other order of the Commission pertaining to the site to be evaluated pursuant to this Agreed Order; (2) Miss. Code Ann. §17-17-54 (Supp. 1996); (3) any rule or regulation promulgated by the

Commission, or (4) any permit issued by the Mississippi Environmental Quality Permit Board.

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9. Schedule of Analytical Costs

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TPH-GRO	\$ 90
TPH-DRO	\$ 125
COMPOUNDS - NOT LISTED	**

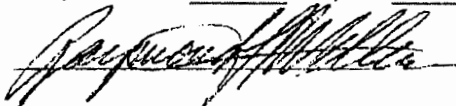
** For those compounds that are not listed, the price will be negotiated on a site-specific basis.

US Technology Corporation Agreed Order
Page No. 4

SO AGREED AND ORDERED, this the 23 day of July,
2009.


Trudy Fisher
Executive Director
Mississippi Commission on
Environmental Quality

AGREED, this the 9th day of July, 2009.

BY: 

TITLE: Raymond Williams, President
US Technology Corporation

STATE OF Ohio

COUNTY OF STARK

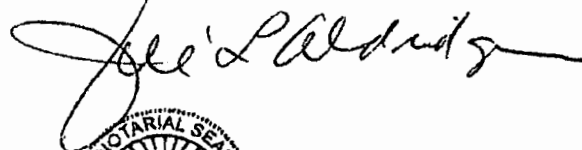
PERSONALLY appeared before me, the undersigned authority in and for the jurisdiction aforesaid, the within named Raymond Williams who first being duly sworn, did state upon his/her oath and acknowledge to me that he/she is the President of US Technology Corporation and is authorized by that Corporation to sign this Agreement and to enter this Agreement on behalf of US Technology.

SWORN TO AND SUBSCRIBED BEFORE ME, this the 9th day of
July, 2009.

MY COMMISSION EXPIRES:

July 28, 2013

NOTARY PUBLIC





JILL L. ALDRIDGE
Notary Public, State of Ohio
My Commission Expires 7/28/2013

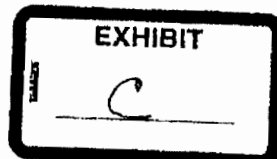
BEFORE THE MISSISSIPPI COMMISSION ON ENVIRONMENTAL QUALITY

In re: Matter of
US Technology Corporation
1446 Tuscarawas St. West
Canton, OH 44702

Order No. **5611 09**

The Mississippi Commission on Environmental Quality ("Commission"), the Mississippi Department of Environmental Quality ("MDEQ") and US Technology Corporation, ("UST") now enter the following agreement pursuant to the Uncontrolled Site Voluntary Evaluation Program ("Program") created in Miss. Code Ann. §17-17-54(2) (Supp. 1996), as follows:

1. UST is the former operator pursuant to an Agreed order at the former Hydromex site ("site") located at 700 South Industrial Parkway in Yazoo City, Mississippi. MDEQ has reason to believe that conditions which warrant oversight by MDEQ exist at the site. UST has transmitted information regarding these conditions in the form of final cleanup documents, dated May 27, 2009.
2. The site is an uncontrolled site within the purview of Miss. Code Ann. §17-17-54. UST desires to submit this site for participation in the Program. By this agreement, MDEQ accepts the site for participation in the Program.
3. UST agrees to the following terms and conditions of participation in the Program:
 - (a) UST will pay all costs of MDEQ's actions associated with MDEQ's administration and evaluation of the site. For the first twelve months in which this Agreed Order is effective, these costs will be calculated at the rate of \$100.00 per hour for each hour of MDEQ staff or subcontractor time spent reviewing, assessing, investigating, reporting on, taking administrative action in regard to, analyzing or studying the site or the information and plans regarding the site submitted by UST, plus MDEQ's actual costs (above and beyond staff/subcontractor time) for obtaining and analyzing split samples and additional samples deemed necessary by MDEQ. Analytical costs will be charged as shown on the relevant schedule of analytical costs, found in Section 9 of this order. MDEQ reserves the right to increase or decrease the per-hour and analytical cost schedule at any time after the first twelve months in which this Agreed Order is effective. In case of such an increase or decrease, MDEQ will notify UST in writing of the new cost schedule, and the new cost schedule will become effective forty-five



days after the date of the written notice to UST. If UST determines to discontinue its participation in the Program for the site after a change by MDEQ in the per-hour and analytical cost schedule, UST may terminate its participation in the program as is stated in paragraph 8, below.

- (b) MDEQ will send an invoice to UST on a monthly basis stating the program costs assigned to the site that have not been paid prior to the date of invoice by UST, and UST will pay that amount to MDEQ, for deposit into the Uncontrolled Site Evaluation Trust Fund ("Fund"), within 30 days following the invoice date.
- (c) UST will be liable for the payment of all invoiced amounts described in subparagraph 3(b), above.

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Commission, or (4) any permit issued by the Mississippi Environmental Quality Permit Board.

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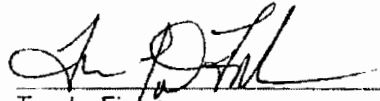
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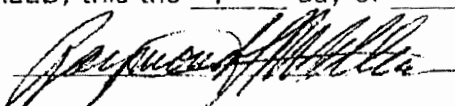
US Technology Corporation Agreed Order
Page No. 4

SO AGREED AND ORDERED, this the 23 day of July,
2009.


Trudy Fisher
Executive Director
Mississippi Commission on
Environmental Quality

AGREED, this the 9th day of July, 2009.

BY:


TITLE: Raymond Williams, President
US Technology Corporation

STATE OF Ohio

COUNTY OF STARK

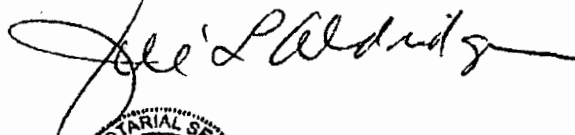

PERSONALLY appeared before me, the undersigned authority in and for the jurisdiction aforesaid, the within named Raymond Williams who first being duly sworn, did state upon his/her oath and acknowledge to me that he/she is the President of US Technology Corporation and is authorized by that Corporation to sign this Agreement and to enter this Agreement on behalf of US Technology.

SWORN TO AND SUBSCRIBED BEFORE ME, this the 9th day of
July, 2009.

MY COMMISSION EXPIRES:

July 28, 2013

NOTARY PUBLIC



JILL L. ALDRIDGE
Notary Public, State of Ohio
My Commission Expires 7/28/2013

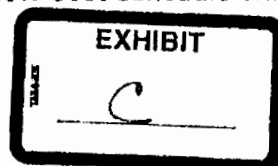
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US Technology Corporation Agreed Order
Page No. 4

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2009.


Trudy Fisher
Executive Director
Mississippi Commission on
Environmental Quality

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BY: 

TITLE: Raymond Williams, President
US Technology Corporation

STATE OF Ohio

COUNTY OF STARK



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NOTARY PUBLIC



JILL L. ALDRIDGE
Notary Public, State of Ohio
My Commission Expires 7/28/2013

SECTION 308 - PORTLAND CEMENT TREATED COURSES

308.01--Description. This work consists of constructing one or more courses of a mixture of cement, soil or soil aggregate, and water in accordance with these specifications and in reasonably close conformity with the lines, grades, and typical cross sections shown on the plans or established by the Engineer.

308.02--Materials.

308.02.1--Materials to be Treated. The materials to be treated shall consist of materials in place or placed under this contract.

308.02.2--Water. Water shall conform to the requirements of Subsection 714.01.3.

308.02.3--Portland Cement. Cement shall conform to the requirements of Section 701.

When bulk cement is used, the Contractor shall provide means suitable to the Engineer for applying. The Engineer shall weigh shipments at random for verification of bulk cement quantities.

When bag cement is furnished, the bag shall bear the manufacturer's certified weight. Bags varying more than five percent from the certified weight will be rejected, and the average weight of bags in any shipment, determined by weighing 50 bags taken at random, shall not be less than the certified weight.

Cement shall be stored and handled in closed, weatherproof containers until distribution to the section of road being processed. If storage bins are used, they shall be completely enclosed.

308.02.4--Curing Seals. Curing seal shall be Emulsified Asphalt, Grade EA-1, SS-1, CMS-2h, or MS-2h meeting the applicable requirements of Section 702.

308.02.5--Soil-Cement Design. The design of soil-cement courses shall be performed by the Central Laboratory.

308.03--Construction Requirements.

308.03.1--General. The intent of these specifications is to provide for a cement treated course of designated thickness consisting of a uniform mixture of cement,

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soil or soil aggregate, and water; constructed at the required moisture content to the required density; free of laminations, construction cracks, ridges, or loose material; and with a smooth, closely knit surface meeting the requirements set out in Section 321.

A course whose compacted thickness is designated to be more than eight inches, shall be constructed in two or more layers of approximately equal thickness. The maximum compacted thickness of any one layer shall not exceed eight inches.

Immediately prior to placement of a course to be cement treated on an in place cement treated course, the in place course shall be thoroughly moistened.

Except as necessary to provide the required curing and maintenance of traffic, all equipment and traffic shall be kept off each completed cement treated course until it is thoroughly cured. Unless otherwise specified, the curing period shall be seven days exclusive of days during which the temperature falls below 35°F.

Prior to joining a previous day's work, or work more than two hours old, a vertical construction joint, normal to the centerline of the roadbed, shall be made in the old work. The joint shall be moistened if dry. Additional processing shall not be started until the construction joint has been approved by the Engineer.

When vertical longitudinal joints are specified or permitted, the joints shall be constructed parallel to the centerline by cutting into the existing edge for a sufficient distance to provide a vertical face for the depth of the course. The material cut away may be disposed of by spreading in a thin layer on the adjacent lane to be constructed, or otherwise disposed of in a satisfactory manner. If dry, cut joints shall be moistened immediately in advance of placing fresh mixture adjacent to them.

On multi-lane construction, the Contractor may construct temporary crossovers at locations approved by the Engineer between roadway lanes to facilitate construction operations. The crossovers shall be built, removed, the median restored to section, and all erosion control items completed in accordance with the requirements of the specifications without extra cost to the State.

The first section of each cement treated course constructed will serve as a test section. The length of the test section will be determined by the capability of the equipment provided to perform the work, but not less than 350 linear feet nor more than 500 linear feet for the designated width. The Engineer and the Contractor will evaluate results of the test section in relation to contract requirements. In case the Engineer determines the work is not satisfactory, the Contractor's procedures shall be revised and augment or replace equipment as necessary to assure work completed in accordance with the contract, and shall correct all deficient work at no additional cost to the State.

308.03.2--Equipment.

308.03.2.1--General. Equipment necessary for the proper prosecution of the work shall be on the project and approved by the Engineer prior to its use.

When bulk cement is used and application of cement is made from equipment other than the delivery transport, batch-type or platform scales meeting the requirements of Subsection 401.03.2.1.11, respectively, shall be provided at approved locations on or near the project.

Approval of cement spreaders will be contingent upon their known or demonstrated ability to make distribution of cement within allowable tolerances.

Watering equipment shall be pressurized, have one or more spray bars with suitable nozzle openings, and have positive controls for applying varying quantities of water.

Mixing shall be performed with multiple pass mixers, single pass mixers, traveling mixing plants, or central mixing plants, as specified in the contract.

Mixing and scarifying equipment for the road mix methods shall be capable of positive depth control.

Rollers shall be of sufficient number, type, size, and weight to accomplish the required compaction.

Leakage of water, oil, grease, or other liquids from equipment shall be immediately corrected, or the leaking equipment removed from the work and replaced with satisfactory equipment.

308.03.2.2--Multiple Pass Mixers. Multiple pass mixers shall be the rotary-type with sufficient tines and so constructed and operable as to obtain by multiple passes uniform mixture of the cement, soil-aggregate, and water for the full depth of the course.

308.03.2.3--Single Pass Mixers. Single pass mixers shall be the pugmill type so constructed and operable as to meter the required quantity of water through a pressurized spray and obtain by a single pass a uniform mixture of the cement, soil or soil-aggregate, and water for the full depth of the course.

308.03.2.4--Traveling Plant Mixers. Traveling mixing plants shall be either of the type which will pulverize the material to be treated and mix it and cement with the proper quantity of water without picking the materials up from the roadway, or of the pugmill type which elevates the materials into a pugmill for mixing. The plant shall be equipped with a device which will accurately control and measure the quantity of water used. Worn scarifying and mixing parts shall

308.03.7--Application of Cement.

308.03.7.1--General. The percentages of cement shown on the plans are based on preliminary soil investigation and are approximate. Before construction is started, the Department will make the necessary tests to determine the percentages of cement required.

The quantity of cement spread on a section or added through a central plant shall not vary more than five percent of the quantity ordered. When the quantity spread is deficient by more than five percent, an additional application of cement shall be uniformly spread over the entire section to correct the deficiency prior to mixing operation. Cement, including that applied to correct deficiency, in excess of the allowable plus tolerance will be deducted from measured quantities.

When the quantity of cement added through a central plant is deficient by more than the allowable tolerance, all mixtures produced with deficient cement will be considered unacceptable.

When the quantity of cement added through a central plant is in excess of the allowable tolerance, the excess will be computed by the Engineer and deducted from measured quantities.

308.03.7.2--Weather Limitations. No cement or cement treated material shall be placed in Districts 1, 2, 3, and 5 between November 15 and March 15, nor in Districts 6 and 7 between December 1 and March 1. Cement or cement treated material shall not be applied when the temperature is below 40°F nor when the Engineer determines, based on the latest information available from the National Weather Service, that probable freezing will occur within seven days in the area in which the project is located. No cement or cement treated material shall be placed on a frozen foundation, nor shall cement be mixed with frozen material.

308.03.7.3--Road Mix Method. After preparation of the grade, the required quantity of cement shall be spread uniformly over the grade. Cement lost or damaged from any cause shall be replaced without additional compensation before mixing is started.

The cement spreader shall be positioned by string lines or other approved methods during spreading to insure proper application of cement. All cement deposited into the spreader shall be weighed so that the pay quantity and the rate of spread can be determined.

In small areas, bag distribution in an approved manner, will be permitted. When bag distribution is made, a spike-toothed harrow or other equipment, which will not drag or blade the cement out of desired position but will strike it off at a uniform height, may be used. A motor grader, or other blade-type equipment, shall not be used to spread the cement.

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Except for final finishing, all processing shall be completed within three hours after spreading. Except by written permission of the Engineer, no cement shall be spread on an area which cannot be completely processed, including all final surface finishing, during the same day.

No cement shall be applied when the moisture content of the material to be processed exceeds the optimum for the soil-cement mixture by more than two percentage points. No cement shall be spread when free water is on the surface of the roadbed.

No equipment except that used in spreading or mixing shall be allowed to pass over the freshly spread cement until mixed with the material to be treated.

308.03.7.4--Central Plant Mix Method. The cement shall be uniformly metered into the soil or soil-aggregate in the specified proportions and at the time and in the manner that the application of water will not cause formation of cement balls.

308.03.8--Mixing.

308.03.8.1--General. Unless otherwise indicated, cement treated materials may be processed by any one or combination of the mixing equipment described in Subsection 308.03.2. Where the bid schedule indicates single pass mixers, traveling plant mixers or central plant mixers will also be permitted. Where the bid schedule indicates traveling plant mixers, central plant mixers will also be permitted.

Preliminary scarifying shall be carefully controlled and the undisturbed foundation shall have a crown conforming as nearly as practicable to that of the finished course. Subject to the moisture limitations prior to spreading cement as referenced in Subsection 308.03.7.3, soil to be processed may be pre-wet prior to spreading cement. All additional water required to bring the section being processed to the required moisture content shall be applied within one hour after the beginning of mixing.

Mixing shall be carefully controlled so that the bottom of the course will conform as closely as possible to the design grade and cross section.

When the plans indicate multiple courses to be constructed, the material for each course shall be mixed separately. Multiple courses shall be constructed so that each course is in direct contact with the underlying course, and an unmixed cushion of material between layers will not be permitted.

Each increment of water added during mixing shall be incorporated into the mixture for the full depth, and no portion of the mixture shall remain undisturbed for more than 30 minutes prior to compaction. Mixing and water application

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shall be continued as necessary to produce a completed mixture of uniform moisture content. Particular care shall be exercised to insure satisfactory moisture distribution along the edges of the section, and to avoid the addition of excess water.

The soil-cement mixture for subgrade and base construction shall be pulverized to the extent that 100 percent of the material, exclusive of gravel and stone, by dry weight will pass a 1-inch sieve and a minimum of 75 percent will pass a No. 4 sieve.

The soil-cement mixture for design soils shall be pulverized to the extent that 100 percent of the material, exclusive of gravel and stone, by dry weight will pass a 1-inch sieve and a minimum of 60 percent will pass No. 4 sieve.

When the un-compacted mixture is wetted by rain to the extent the average moisture content at the time for final compaction exceeds optimum by more than two percent, or if any of the operations after the start of mixing are interrupted continuously for more than 30 minutes, the entire area affected shall be reconstructed in accordance with these specifications at no additional cost to the State.

308.03.8.2--Road Mix Methods.

308.03.8.2.1--Multiple Pass Mixing. After the cement has been spread, it shall be mixed with the material to be treated without the addition of water. Immediately after the preliminary mixing of cement and soil or soil-aggregate, water as necessary shall be applied in the quantity required and incorporated uniformly into the mixture for the full depth.

After the last increment of water has been applied, mixing shall continue as necessary until a uniform mixture of cement, soil or soil-aggregate, and water for the full depth of the course has been obtained.

308.03.8.2.2--Single Pass Mixing. After the cement has been spread, it shall be mixed by a mixer which applies water and mixes in one simultaneous and continuous operation. The mixer shall be operated at a speed that will produce a uniform mixture meeting all specified requirements for the full depth of the course.

308.03.8.2.3--Traveling Plant Mixing. After the cement has been spread, it shall be mixed with a traveling plant mixer that will apply the proper quantity of water and produce in one simultaneous and continuous operation a mixture meeting all the requirements of the contract.

308.03.8.3--Central Plant Method. Mixing in a central plant shall continue until a homogeneous mixture meeting specified requirements is obtained, and no

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varying appearance is evident. The mixing time may be adjusted by the Engineer as necessary.

308.03.9--Shaping, Compacting, and Finishing.

308.03.9.1--General. The mixed material shall be shaped as required immediately after mixing, or delivery to the roadbed in the case of central plant mixed material. Initial compaction shall begin immediately, and machining and compacting shall continue until the entire depth and width of the course is compacted to the required density within two hours of the time of beginning mixing. Compaction shall be by equipment and methods which do not result in lamination.

Areas inaccessible to rollers shall be compacted to the required density by other approved methods.

The addition of thin layers of cement-treated material in order to conform to cross sectional or grade requirements will not be permitted.

Compaction by vibration shall not be performed after the cement has taken its initial set. Vibratory compaction of a section shall be completed within one hour.

During compaction, a spike-tooth harrow or other suitable equipment shall be used as required to prevent lamination.

After the mixture, except the top mulch, is compacted, water shall be added as required to the mulch, and thoroughly mixed with a spike-tooth harrow or its equivalent to bring the mulch to the needed moisture content.

The surface shall then be reshaped to the required lines, grades, and cross section, and if necessary shall be lightly scarified to remove imprints left by the compacting or shaping equipment. The surface shall then be sprinkled as necessary and thoroughly rolled with a pneumatic roller, and if the mixture contains plus No. 4 aggregate, at least one complete coverage of the section shall be made with a steel-wheel tandem roller.

Surface compaction and finishing for the entire section shall be performed in a manner that will produce a smooth, closely knit surface, free from laminations, construction cracks, ridges, or loose material, and conforming to the crown, grade, and lines stipulated within four hours after the beginning of mixing.

Upon completion of compaction, testing will be performed in accordance with Subsections 700.03 and 700.04.

308.03.9.2--Density. Determination of acceptance of compaction of portland cement treated courses for required density will be performed on a lot to lot

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basis. Each lot will be each 2,500 linear feet per layer placed. At the discretion of the Engineer, a residual portion of a lot completed during a day's operation may be considered a separate lot or may be included in the previous or subsequent lot, except that any day's operation of less than one full lot will be considered a lot.

The lot will be divided into five approximately equal sublots with one density test taken at random in each sublot. The average of the five (5) density tests shall equal or exceed 98.0 percent with no single density test below 94.0 percent. Sublots with a density below 94.0 percent shall be corrected at no additional cost to the State and retested for acceptance.

For cement treated materials other than for design soils and bases, the required density will be set out elsewhere in the contract.

308.03.9.3--Width, Thickness, and Surface Requirements. For the purpose of determining reasonable conformity with the designated width of a treated course, it shall be understood that the width of a treated course shall not vary from the designated edge lines by more than plus or minus one inch.

For the purpose of determining reasonable conformance with the designated thickness of a treated course, it shall be understood that the depth of a treated course shall not vary from the designated thickness by more than plus or minus one inch.

The finished surface of a treated course shall conform to the requirements shown on the plans, within the tolerances allowable under Section 321.

308.03.10--Protection and Curling. Each completed course shall be covered with a bituminous curing seal as soon as possible but no later than 24 hours after completion. The surface shall be sealed with one of the specified bituminous materials applied by a pressure distributor at the rate of 0.10 to 0.25 gallon per square yard or as directed by the Engineer. The bituminous material shall be heated or otherwise prepared to insure uniform distribution. Should the Contractor fail to seal the treated course within the time specified, the Engineer will suspend all other work and withhold payment of the current estimate(s) until all damages resulting there from is corrected and the treated course is sealed.

A subsequent course shall not be placed on the sealed course for at least seven (7) calendar days. During this 7-day period, the treated course shall not be subjected to any type of traffic and equipment.

The Contractor shall maintain the treated course and the curing seal in a satisfactory condition until covered by a subsequent course. Protection shall include immediate repairs of any surface irregularities or other defects that may occur or develop. It shall be the Contractor's responsibility to control traffic and

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equipment loads to avoid damage and to guard against freezing of the treated material.

All damage resulting from the Contractor's failure to protect and cure the treated course as specified herein or from freezing that may occur prior to being covered with the next course shall be corrected at no additional cost to the State.

The Contractor shall submit, for approval of the Engineer, a method of correction that will restore the strength of the damaged material to that originally specified.

308.03.11--Maintenance. The Contractor shall maintain the cement treated course and the curing seal in a satisfactory condition until covered by a subsequent course. Maintenance shall include immediate repairs of surface irregularities or other defects that may occur. It shall be the Contractor's responsibility to control traffic and equipment loads to avoid damage and to guard against freezing of the course. All maintenance shall be performed at the expense of the Contractor and repeated as necessary to keep the cement treated material and the curing seal intact.

308.04--Method of Measurement. Portland cement incorporated in the accepted work, subject to the limitations set out in Subsection 308.03.7.1, will be measured by the ton, as designated, in accordance with the provisions of Section 109.

Accepted soil-cement-water mixing will be measured by the square yard or ton.

Contractor furnished materials will be measured and paid for in accordance with the provisions for the governing pay items shown in the contract.

Water and bituminous materials for the curing seal will not be measured for separate payment.

Unauthorized wastage or usage of any materials, unused materials remaining in stockpiles, and additional materials required for reconstruction of unacceptable work will be deducted from measured quantities. Determination of quantities to be deducted will be made by the method the Engineer considers to be most practicable and equitable, and the Contractor's decision as to the method used shall be final.

308.05--Basis of Payment. Portland cement will be paid for at the contract unit price per ton. Soil-cement-water mixing will be paid for at the contract unit price per square yard or ton, as specified. The prices thus paid shall be full compensation for completing the work.

Payment will be made under:

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308-A: Portland Cement

Section 308

- per ton

308-B: Soil-Cement-Water Mixing, Type* Mixers,
Component

- per square yard
or ton**

* Optional, Single Pass, Multiple Pass, Traveling Plant, or Central
Plant.

** Central Plant Mixers Only.

SECTION 308 - PORTLAND CEMENT TREATED COURSES

308.01--Description. This work consists of constructing one or more courses of a mixture of cement, soil or soil aggregate, and water in accordance with these specifications and in reasonably close conformity with the lines, grades, and typical cross sections shown on the plans or established by the Engineer.

308.02--Materials.

308.02.1--Materials to be Treated. The materials to be treated shall consist of materials in place or placed under this contract.

308.02.2--Water. Water shall conform to the requirements of Subsection 714.01.3.

308.02.3--Portland Cement. Cement shall conform to the requirements of Section 701.

When bulk cement is used, the Contractor shall provide means suitable to the Engineer for applying. The Engineer shall weigh shipments at random for verification of bulk cement quantities.

When bag cement is furnished, the bag shall bear the manufacturer's certified weight. Bags varying more than five percent from the certified weight will be rejected, and the average weight of bags in any shipment, determined by weighing 50 bags taken at random, shall not be less than the certified weight.

Cement shall be stored and handled in closed, weatherproof containers until distribution to the section of road being processed. If storage bins are used, they shall be completely enclosed.

308.02.4--Curing Seals. Curing seal shall be Emulsified Asphalt, Grade EA-1, SS-1, CMS-2h, or MS-2h meeting the applicable requirements of Section 702.

308.02.5--Soil-Cement Design. The design of soil-cement courses shall be performed by the Central Laboratory.

308.03--Construction Requirements.

308.03.1--General. The intent of these specifications is to provide for a cement treated course of designated thickness consisting of a uniform mixture of cement,

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soil or soil aggregate, and water; constructed at the required moisture content to the required density; free of laminations, construction cracks, ridges, or loose material; and with a smooth, closely knit surface meeting the requirements set out in Section 321.

A course whose compacted thickness is designated to be more than eight inches, shall be constructed in two or more layers of approximately equal thickness. The maximum compacted thickness of any one layer shall not exceed eight inches.

Immediately prior to placement of a course to be cement treated on an in place cement treated course, the in place course shall be thoroughly moistened.

Except as necessary to provide the required curing and maintenance of traffic, all equipment and traffic shall be kept off each completed cement treated course until it is thoroughly cured. Unless otherwise specified, the curing period shall be seven days exclusive of days during which the temperature falls below 35°F.

Prior to joining a previous day's work, or work more than two hours old, a vertical construction joint, normal to the centerline of the roadbed, shall be made in the old work. The joint shall be moistened if dry. Additional processing shall not be started until the construction joint has been approved by the Engineer.

When vertical longitudinal joints are specified or permitted, the joints shall be constructed parallel to the centerline by cutting into the existing edge for a sufficient distance to provide a vertical face for the depth of the course. The material cut away may be disposed of by spreading in a thin layer on the adjacent lane to be constructed, or otherwise disposed of in a satisfactory manner. If dry, cut joints shall be moistened immediately in advance of placing fresh mixture adjacent to them.

On multi-lane construction, the Contractor may construct temporary crossovers at locations approved by the Engineer between roadway lanes to facilitate construction operations. The crossovers shall be built, removed, the median restored to section, and all erosion control items completed in accordance with the requirements of the specifications without extra cost to the State.

The first section of each cement treated course constructed will serve as a test section. The length of the test section will be determined by the capability of the equipment provided to perform the work, but not less than 350 linear feet nor more than 500 linear feet for the designated width. The Engineer and the Contractor will evaluate results of the test section in relation to contract requirements. In case the Engineer determines the work is not satisfactory, the Contractor's procedures shall be revised and augment or replace equipment as necessary to assure work completed in accordance with the contract, and shall correct all deficient work at no additional cost to the State.

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308.03.2--Equipment.

308.03.2.1--General. Equipment necessary for the proper prosecution of the work shall be on the project and approved by the Engineer prior to its use.

When bulk cement is used and application of cement is made from equipment other than the delivery transport, batch-type or platform scales meeting the requirements of Subsection 401.03.2.1.11, respectively, shall be provided at approved locations on or near the project.

Approval of cement spreaders will be contingent upon their known or demonstrated ability to make distribution of cement within allowable tolerances.

Watering equipment shall be pressurized, have one or more spray bars with suitable nozzle openings, and have positive controls for applying varying quantities of water.

Mixing shall be performed with multiple pass mixers, single pass mixers, traveling mixing plants, or central mixing plants, as specified in the contract.

Mixing and scarifying equipment for the road mix methods shall be capable of positive depth control.

Rollers shall be of sufficient number, type, size, and weight to accomplish the required compaction.

Leakage of water, oil, grease, or other liquids from equipment shall be immediately corrected, or the leaking equipment removed from the work and replaced with satisfactory equipment.

308.03.2.2--Multiple Pass Mixers. Multiple pass mixers shall be the rotary-type with sufficient tines and so constructed and operable as to obtain by multiple passes uniform mixture of the cement, soil-aggregate, and water for the full depth of the course.

308.03.2.3--Single Pass Mixers. Single pass mixers shall be the pugmill type so constructed and operable as to meter the required quantity of water through a pressurized spray and obtain by a single pass a uniform mixture of the cement, soil or soil-aggregate, and water for the full depth of the course.

308.03.2.4--Traveling Plant Mixers. Traveling mixing plants shall be either of the type which will pulverize the material to be treated and mix it and cement with the proper quantity of water without picking the materials up from the roadway, or of the pugmill type which elevates the materials into a pugmill for mixing. The plant shall be equipped with a device which will accurately control and measure the quantity of water used. Worn scarifying and mixing parts shall

be replaced, and extra parts shall be available for replacements.

308.03.2.5--Central Plant Mixers. Central mixing plants shall be either the batch type using revolving blade or rotary drum mixers or the continuous mixing type. The cement, soil or soil-aggregate, and water may be proportioned either by weight or by volume. There shall be means by which the Engineer can readily verify the proportions in each batch or the rate of flow for continuous mixing.

The charge and mixing time in a batch mixer, or the rate of feed to a continuous mixer, shall be such as to obtain complete mixing of all the material. Dead areas in the mixer, in which the material does not move or is not sufficiently agitated, shall be corrected. The plant shall deliver a uniform mixture meeting all specified requirements.

308.03.3--Road Mix Method. When the road mix method is used, no hauling of materials for a subsequent course will be permitted directly on a completed cement treated course. Placing of material for a higher course shall be accomplished as outlined in Subsection 321.03. Materials for a higher course shall be kept bladed down as it is placed, and hauled over with truck traffic being distributed over its entire width.

Where reconstruction is required, it shall be for the full depth and width of the deficient section. The adding of a thin layer or strip of cement treated material will not be permitted. All sections to be reconstructed later than the two-hour period allowed for initial compaction shall have additional cement. When reconstruction is to be performed within 48 hours after the initial application of cement, 50 percent of the original quantity of cement shall be added. When reconstruction is to be later than 48 hours after the initial application of cement, an engineering study will be made, and the Engineer will specify the additional quantity of cement to be added, or the Engineer may require the total removal of the deficient work. If removal is required, a course meeting the requirements of the contract shall be constructed with new materials.

In all cases where reconstruction is performed by the addition of cement, the cement, in place materials, and water shall be thoroughly mixed, processed, compacted, and finished in accordance with the requirements of the contract.

Where deficient work is removed, the removal and disposal shall be performed in a manner satisfactory to the Engineer, and all materials shall be replaced and a new course constructed in accordance with the requirements of the contract. The furnishing of all materials for and all reconstruction shall be performed by the Contractor at no additional cost to the State.

308.03.4--Central Plant Mix Method. When the central plant mix method is used, material for a higher course may be hauled directly on a completed and

properly cured cement treated course for the minimum distance necessary as referenced in Subsection 321.03. The Contractor shall be fully responsible for all damages to the course.

Prior to placement of a course processed by the plant mix method, the Contractor shall have made satisfactory provisions for completing the section to specified requirements. To comply with these requirements, the Contractor shall, if necessary, use material(s) specified for contiguous shoulder construction.

The mixture shall be hauled to the roadway in trucks equipped with protective covers. The mixture shall be uniformly placed on a moistened foundation by full-width spreader, or partial-width spreaders working in echelon and spaced close enough together to place the entire course in one operation. The elapsed time between the start of moist mixing and the start of compaction on the roadway shall not exceed 60 minutes. The elapsed time between placement of cement treated material in adjacent lanes shall not exceed 30 minutes, except where longitudinal construction joints are specified, or when joints are permitted by the Engineer in case of emergency. In the latter case longitudinal joints conforming to the requirements of these specifications will be permitted only to allow placement of material in transit at the time of the emergency.

The material shall be placed, shaped, and compacted so that the completed course will be uniform, smooth, and conform to all of the requirements specified.

Dumping of the mixture in piles or windrows and spreading with a motor grader or similar equipment will not be permitted except where the Engineer determines that such spreading is reasonable, as in the case of small areas inaccessible to mechanical spreaders.

In all cases where reconstruction is required, the deficient work shall be removed, disposed of, and replaced with materials meeting the requirements of these specifications. Reconstruction shall be for the full depth and width of the deficient section, except where the Engineer determines that partial reconstruction will be sufficient, the Engineer may authorize in writing that reconstruction may be made on the defined partial section in accordance with the provisions and requirements for reconstruction under Subsection 308.03.3 at no additional cost to the State.

308.03.5--Preparation of Grade. Prior to construction or reconstruction, the foundation shall be prepared in accordance with the requirements of Section 321. The tolerance from design grade immediately prior to spreading cement shall be minus one inch for design soils and plus or minus one-half inch for bases.

308.03.6--Preparation of Materials. Particles of aggregates larger than those passing a three-inch sieve and deleterious substances, such as roots, sticks, grass turfs, or other vegetable matter shall be removed.

308.03.7--Application of Cement.

308.03.7.1--General. The percentages of cement shown on the plans are based on preliminary soil investigation and are approximate. Before construction is started, the Department will make the necessary tests to determine the percentages of cement required.

The quantity of cement spread on a section or added through a central plant shall not vary more than five percent of the quantity ordered. When the quantity spread is deficient by more than five percent, an additional application of cement shall be uniformly spread over the entire section to correct the deficiency prior to mixing operation. Cement, including that applied to correct deficiency, in excess of the allowable plus tolerance will be deducted from measured quantities.

When the quantity of cement added through a central plant is deficient by more than the allowable tolerance, all mixtures produced with deficient cement will be considered unacceptable.

When the quantity of cement added through a central plant is in excess of the allowable tolerance, the excess will be computed by the Engineer and deducted from measured quantities.

308.03.7.2--Weather Limitations. No cement or cement treated material shall be placed in Districts 1, 2, 3, and 5 between November 15 and March 15, nor in Districts 6 and 7 between December 1 and March 1. Cement or cement treated material shall not be applied when the temperature is below 40°F nor when the Engineer determines, based on the latest information available from the National Weather Service, that probable freezing will occur within seven days in the area in which the project is located. No cement or cement treated material shall be placed on a frozen foundation, nor shall cement be mixed with frozen material.

308.03.7.3--Road Mix Method. After preparation of the grade, the required quantity of cement shall be spread uniformly over the grade. Cement lost or damaged from any cause shall be replaced without additional compensation before mixing is started.

The cement spreader shall be positioned by string lines or other approved methods during spreading to insure proper application of cement. All cement deposited into the spreader shall be weighed so that the pay quantity and the rate of spread can be determined.

In small areas, bag distribution in an approved manner, will be permitted. When bag distribution is made, a spike-toothed harrow or other equipment, which will not drag or blade the cement out of desired position but will strike it off at a uniform height, may be used. A motor grader, or other blade-type equipment, shall not be used to spread the cement.

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Except for final finishing, all processing shall be completed within three hours after spreading. Except by written permission of the Engineer, no cement shall be spread on an area which cannot be completely processed, including all final surface finishing, during the same day.

No cement shall be applied when the moisture content of the material to be processed exceeds the optimum for the soil-cement mixture by more than two percentage points. No cement shall be spread when free water is on the surface of the roadbed.

No equipment except that used in spreading or mixing shall be allowed to pass over the freshly spread cement until mixed with the material to be treated.

308.03.7.4--Central Plant Mix Method. The cement shall be uniformly metered into the soil or soil-aggregate in the specified proportions and at the time and in the manner that the application of water will not cause formation of cement balls.

308.03.8--Mixing.

308.03.8.1--General. Unless otherwise indicated, cement treated materials may be processed by any one or combination of the mixing equipment described in Subsection 308.03.2. Where the bid schedule indicates single pass mixers, traveling plant mixers or central plant mixers will also be permitted. Where the bid schedule indicates traveling plant mixers, central plant mixers will also be permitted.

Preliminary scarifying shall be carefully controlled and the undisturbed foundation shall have a crown conforming as nearly as practicable to that of the finished course. Subject to the moisture limitations prior to spreading cement as referenced in Subsection 308.03.7.3, soil to be processed may be pre-wet prior to spreading cement. All additional water required to bring the section being processed to the required moisture content shall be applied within one hour after the beginning of mixing.

Mixing shall be carefully controlled so that the bottom of the course will conform as closely as possible to the design grade and cross section.

When the plans indicate multiple courses to be constructed, the material for each course shall be mixed separately. Multiple courses shall be constructed so that each course is in direct contact with the underlying course, and an unmixed cushion of material between layers will not be permitted.

Each increment of water added during mixing shall be incorporated into the mixture for the full depth, and no portion of the mixture shall remain undisturbed for more than 30 minutes prior to compaction. Mixing and water application

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shall be continued as necessary to produce a completed mixture of uniform moisture content. Particular care shall be exercised to insure satisfactory moisture distribution along the edges of the section, and to avoid the addition of excess water.

The soil-cement mixture for subgrade and base construction shall be pulverized to the extent that 100 percent of the material, exclusive of gravel and stone, by dry weight will pass a 1-inch sieve and a minimum of 75 percent will pass a No. 4 sieve.

The soil-cement mixture for design soils shall be pulverized to the extent that 100 percent of the material, exclusive of gravel and stone, by dry weight will pass a 1-inch sieve and a minimum of 60 percent will pass No. 4 sieve.

When the un-compacted mixture is wetted by rain to the extent the average moisture content at the time for final compaction exceeds optimum by more than two percent, or if any of the operations after the start of mixing are interrupted continuously for more than 30 minutes, the entire area affected shall be reconstructed in accordance with these specifications at no additional cost to the State.

308.03.8.2--Road Mix Methods.

308.03.8.2.1--Multiple Pass Mixing. After the cement has been spread, it shall be mixed with the material to be treated without the addition of water. Immediately after the preliminary mixing of cement and soil or soil-aggregate, water as necessary shall be applied in the quantity required and incorporated uniformly into the mixture for the full depth.

After the last increment of water has been applied, mixing shall continue as necessary until a uniform mixture of cement, soil or soil-aggregate, and water for the full depth of the course has been obtained.

308.03.8.2.2--Single Pass Mixing. After the cement has been spread, it shall be mixed by a mixer which applies water and mixes in one simultaneous and continuous operation. The mixer shall be operated at a speed that will produce a uniform mixture meeting all specified requirements for the full depth of the course.

308.03.8.2.3--Traveling Plant Mixing. After the cement has been spread, it shall be mixed with a traveling plant mixer that will apply the proper quantity of water and produce in one simultaneous and continuous operation a mixture meeting all the requirements of the contract.

308.03.8.3--Central Plant Method. Mixing in a central plant shall continue until a homogeneous mixture meeting specified requirements is obtained, and no

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varying appearance is evident. The mixing time may be adjusted by the Engineer as necessary.

308.03.9--Shaping, Compacting, and Finishing.

308.03.9.1--General. The mixed material shall be shaped as required immediately after mixing, or delivery to the roadbed in the case of central plant mixed material. Initial compaction shall begin immediately, and machining and compacting shall continue until the entire depth and width of the course is compacted to the required density within two hours of the time of beginning mixing. Compaction shall be by equipment and methods which do not result in lamination.

Areas inaccessible to rollers shall be compacted to the required density by other approved methods.

The addition of thin layers of cement-treated material in order to conform to cross sectional or grade requirements will not be permitted.

Compaction by vibration shall not be performed after the cement has taken its initial set. Vibratory compaction of a section shall be completed within one hour.

During compaction, a spike-tooth harrow or other suitable equipment shall be used as required to prevent lamination.

After the mixture, except the top mulch, is compacted, water shall be added as required to the mulch, and thoroughly mixed with a spike-tooth harrow or its equivalent to bring the mulch to the needed moisture content.

The surface shall then be reshaped to the required lines, grades, and cross section, and if necessary shall be lightly scarified to remove imprints left by the compacting or shaping equipment. The surface shall then be sprinkled as necessary and thoroughly rolled with a pneumatic roller, and if the mixture contains plus No. 4 aggregate, at least one complete coverage of the section shall be made with a steel-wheel tandem roller.

Surface compaction and finishing for the entire section shall be performed in a manner that will produce a smooth, closely knit surface, free from laminations, construction cracks, ridges, or loose material, and conforming to the crown, grade, and lines stipulated within four hours after the beginning of mixing.

Upon completion of compaction, testing will be performed in accordance with Subsections 700.03 and 700.04.

308.03.9.2--Density. Determination of acceptance of compaction of portland cement treated courses for required density will be performed on a lot to lot

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basis. Each lot will be each 2,500 linear feet per layer placed. At the discretion of the Engineer, a residual portion of a lot completed during a day's operation may be considered a separate lot or may be included in the previous or subsequent lot, except that any day's operation of less than one full lot will be considered a lot.

The lot will be divided into five approximately equal sublots with one density test taken at random in each sublot. The average of the five (5) density tests shall equal or exceed 98.0 percent with no single density test below 94.0 percent. Sublots with a density below 94.0 percent shall be corrected at no additional cost to the State and retested for acceptance.

For cement treated materials other than for design soils and bases, the required density will be set out elsewhere in the contract.

308.03.9.3--Width, Thickness, and Surface Requirements. For the purpose of determining reasonable conformity with the designated width of a treated course, it shall be understood that the width of a treated course shall not vary from the designated edge lines by more than plus or minus one inch.

For the purpose of determining reasonable conformance with the designated thickness of a treated course, it shall be understood that the depth of a treated course shall not vary from the designated thickness by more than plus or minus one inch.

The finished surface of a treated course shall conform to the requirements shown on the plans, within the tolerances allowable under Section 321.

308.03.10--Protection and Curing. Each completed course shall be covered with a bituminous curing seal as soon as possible but no later than 24 hours after completion. The surface shall be sealed with one of the specified bituminous materials applied by a pressure distributor at the rate of 0.10 to 0.25 gallon per square yard or as directed by the Engineer. The bituminous material shall be heated or otherwise prepared to insure uniform distribution. Should the Contractor fail to seal the treated course within the time specified, the Engineer will suspend all other work and withhold payment of the current estimate(s) until all damages resulting there from is corrected and the treated course is sealed.

A subsequent course shall not be placed on the sealed course for at least seven (7) calendar days. During this 7-day period, the treated course shall not be subjected to any type of traffic and equipment.

The Contractor shall maintain the treated course and the curing seal in a satisfactory condition until covered by a subsequent course. Protection shall include immediate repairs of any surface irregularities or other defects that may occur or develop. It shall be the Contractor's responsibility to control traffic and

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equipment loads to avoid damage and to guard against freezing of the treated material.

All damage resulting from the Contractor's failure to protect and cure the treated course as specified herein or from freezing that may occur prior to being covered with the next course shall be corrected at no additional cost to the State.

The Contractor shall submit, for approval of the Engineer, a method of correction that will restore the strength of the damaged material to that originally specified.

308.03.11--Maintenance. The Contractor shall maintain the cement treated course and the curing seal in a satisfactory condition until covered by a subsequent course. Maintenance shall include immediate repairs of surface irregularities or other defects that may occur. It shall be the Contractor's responsibility to control traffic and equipment loads to avoid damage and to guard against freezing of the course. All maintenance shall be performed at the expense of the Contractor and repeated as necessary to keep the cement treated material and the curing seal intact.

308.04--Method of Measurement. Portland cement incorporated in the accepted work, subject to the limitations set out in Subsection 308.03.7.1, will be measured by the ton, as designated, in accordance with the provisions of Section 109.

Accepted soil-cement-water mixing will be measured by the square yard or ton.

Contractor furnished materials will be measured and paid for in accordance with the provisions for the governing pay items shown in the contract.

Water and bituminous materials for the curing seal will not be measured for separate payment.

Unauthorized wastage or usage of any materials, unused materials remaining in stockpiles, and additional materials required for reconstruction of unacceptable work will be deducted from measured quantities. Determination of quantities to be deducted will be made by the method the Engineer considers to be most practicable and equitable, and the Contractor's decision as to the method used shall be final.

308.05--Basis of Payment. Portland cement will be paid for at the contract unit price per ton. Soil-cement-water mixing will be paid for at the contract unit price per square yard or ton, as specified. The prices thus paid shall be full compensation for completing the work.

Payment will be made under:

Section 308

308-A: Portland Cement

Section 308

- per ton

308-B: Soil-Cement-Water Mixing, Type* Mixers,
Component

- per square yard
or ton**

* Optional, Single Pass, Multiple Pass, Traveling Plant, or Central
Plant.

** Central Plant Mixers Only.



STATE OF MISSISSIPPI
PHIL BRYANT
GOVERNOR
MISSISSIPPI DEPARTMENT OF ENVIRONMENTAL QUALITY
GARY C. RIKARD, EXECUTIVE DIRECTOR
Via Regular U.S. Mail

January 13, 2015

Larry L. Lamberth
Chief, Hazardous Waste Enforcement and Compliance Section
United States Environmental Protection Agency
Sam Nunn Atlanta Federal Center
61 Forsyth Street
Atlanta, Georgia 30303

Re: Mississippi Commission on Environmental Quality v. US Technology Corporation
Yazoo and Madison Counties, Mississippi

Dear Larry:

Enclosed is a copy of MDEQ's sampling information regarding US Technology which is related to samples collected at Yazoo City and at the Canton Landfill.

If you have any questions related to this matter, please contact me at (601) 961-5260.

Very truly yours,

A handwritten signature in black ink, appearing to read "Roy Furrh".

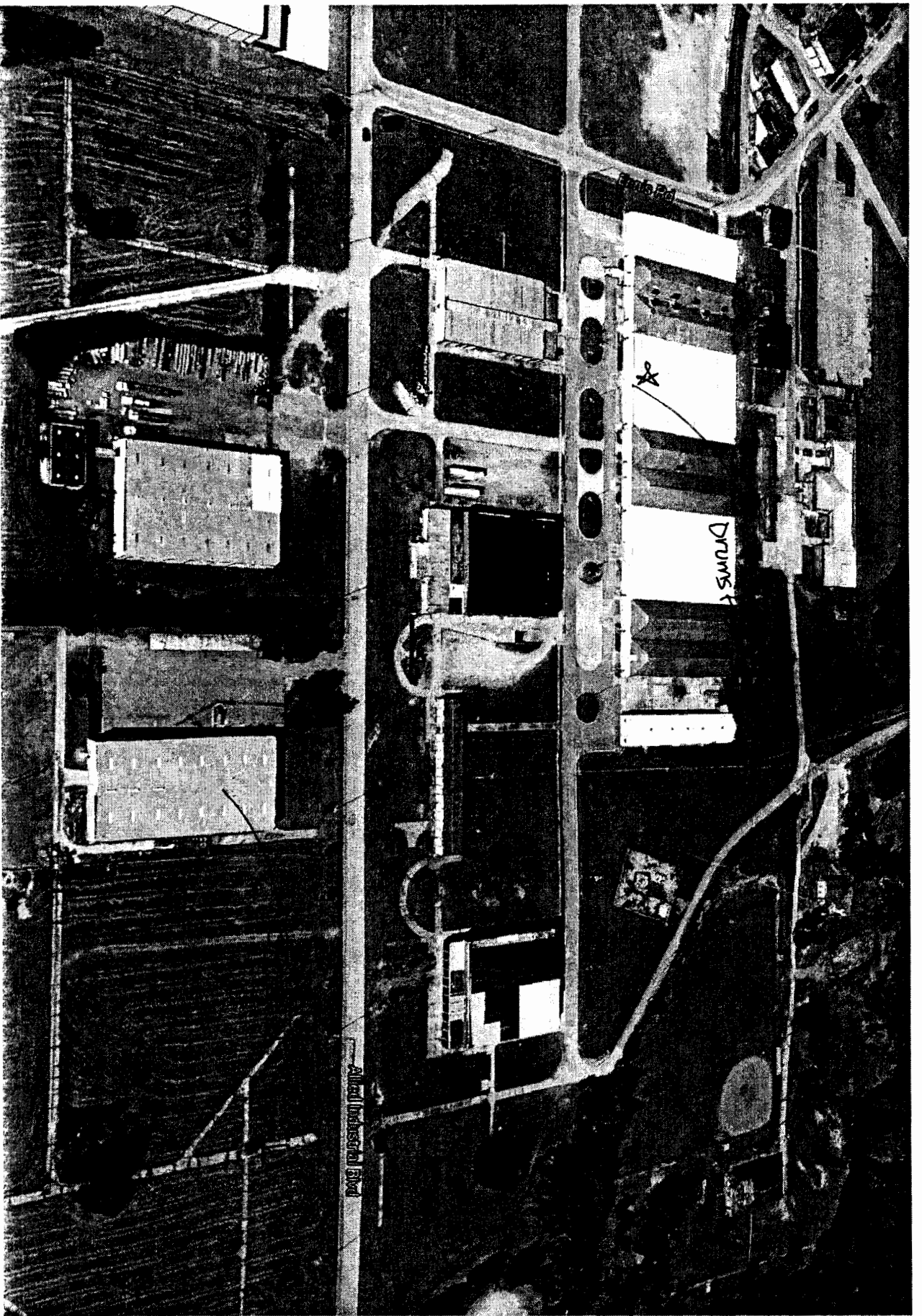
Roy Furrh
General Counsel

RF:dac

Enclosure

Cc: Richard Harrell (w/out encl.)
Steve Bailey (w/out encl.)
Doug Upton (w/out encl.)
Joan Redleaf Durbin, Esq. (w/out encl.)

LEGAL DIVISION



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Georgia Department of Natural Resources

2 Martin Luther King, Jr. Drive, SE, Suite 1066 East, Atlanta, Georgia 30334-9000

Mark Williams, Commissioner

Environmental Protection Division

F. Allen Barnes, Director

Land Protection Branch

Mark Smith, Branch Chief

Office: 404/657-8831 Fax: 404/463-6676

GENERATOR INSPECTION REPORT

SECTION I: FACILITY INFORMATION

Facility Name:	US Technology Aerospace Engineering		
EPA Identification Number:	None	NAICS Code:	541330
Location Address:	224 Highway 49 South		
City:	Byron	County:	Peach
Zip Code:	31008		
Mailing Address:	Same as Above		
City:		State:	
Zip Code:			
Facility's current generator status on the day of inspection:	CESQG		
Facility's generator status based on the inspection:	SQG		
Additional Checklists:	Tank	Transporter	Used Oil
			Subpart CC
Estimated Quantity of Hazardous Waste Generated (lbs./month):	330.0 lbs./month		
Basis for Estimate:	2009, 2010 & 2011 Hazardous Waste Manifests and Conversations.		
Officials	Name:	Mr. Ed Wasson	
Contacted:	Title:	Vice President	
	Phone:	(478) 654-6470/478-719-0990 C	
Samples:	Yes	No	X
Photographs:	Yes	No	X
Inspected by:	MEW <i>MEW</i>	Inspection Date:	7/6/11
Submitted Date:	8/15/11		
Reviewed by:	<i>Freddie L. Davis</i>	Review Date:	8/18/2011
Attachments:	None		
File Name:	US Technology Aerospace Engineering , Byron		

SECTION II: PURPOSE OF INSPECTION

A. Hazardous waste generators in Georgia are required to comply with Georgia's Hazardous Waste Management Act (O.C.G.A. 12-8-60), and the Georgia Rules of Hazardous Waste Management (Chapter 391-3-11).

SECTION III: SUMMARY OF FINDINGS

A. Narrative of what the facility does and manufactures:

US Technology Aerospace Engineering is a steel fabrication company that specializes in painting and repainting aerospace vehicles. Hazardous waste is generated from the painting of aircraft parts.

B. What are the hazardous and non-hazardous waste streams (list common name and waste codes):

Solvent waste- (D001-Ignitability, F003-Xylene and F005- Toluene

Scrap metal-Recycling

Solid waste-Trash

COPY

SECTION III: SUMMARY OF FINDINGS CONTINUED

C. Summary of observations and violations:

Section 391-3-11-.04(3)- for failure to notify the Division as a small quantity generator within 30 days after generating spent lacquer thinner; **40 CFR 262.34**- for failure to label and provide a start accumulation dates containers containing spent lacquer thinner in the 180-day storage area, post emergency information next to telephones and label containers in the satellite accumulation area with the words "Hazardous Waste" or with other words that identify the contents; **40 CFR 174**- didn't inspect containers weekly in the 180-day storage area and **40 CFR 279.22**-failed to label drums with the words "Used Oil."

No violations of the Rules were observed at time of inspection.

SECTION IV: PRE-INSPECTION REVIEW

A. GENERAL INFORMATION

1. Notification of Regulated Waste Activity Form on File:	No
2. Most Recent Date of Notification Form:	N/A

What is the facility's current RCRAInfo status:

<input type="checkbox"/>	LQG (>1,000 kg/mo.)	<input type="checkbox"/>	TRANSPORTER
X	SQG (>100 kg/mo. or <1,000kg/mo.)	<input type="checkbox"/>	TSD
<input type="checkbox"/>	CESQG (<100 kg/mo.)	<input type="checkbox"/>	UNIVERSAL WASTE HAULER

MOST RECENT EPA HAZARDOUS WASTE CODES DOCUMENTED BY FILES:

SOURCE OF ABOVE INFORMATION/DATE:	Notification form/ N/A		
LAST INSPECTION DATE: N/A	DATE OF LAST ENFORCEMENT: N/A		
VIOLATIONS NOTED: N/A			
ON FILE (last 3 years)	YES	NO	REQ. YEARS (last 3 years)
BIENNIAL REPORT(S)		X	
HAZARDOUS WASTE REDUCTION PLAN(S)		X	
EXCEPTION REPORT(S)		X	
HAZARDOUS WASTE FEES PAID		N/A	

Note: If this inspection includes sampling, a Site Safety Plan must be approved prior to the inspection and attached to this report.

(N/A – Not applicable)

SECTION V: FIELD OBSERVATION DATA

A. WASTE GENERATION

HAZARDOUS WASTE GENERATION (List all waste streams observed and through manifest review)			SATELLITE ACCUMULATION			
WASTE & WASTE CODE (e.g. spent solvent containing acetone/D001, F003)	PROCESS GENERATING WASTE	HOW THE FACILITY CLASSIFIED THE WASTE (waste code)	IS THERE SATELLITE ACCUMULATION? §262.34(c)(1) (Est. Volume in Gallons)	LABELING OF CONTAINER(S) §262.34(c)(1)(ii)	CONTAINER(S) CONDITION/COMPATIBILITY §265.171 & §265.172	CONTAINER(S) CLOSED §265.173
Spent lacquer thinner (D001, F003 & F005)	Cleaning of paint guns	D001, F003 & F005	Yes	No	Good/Metal	Yes

Discuss any waste code/waste stream discrepancies.

Facility filled out a new subsequent notification form 8700-12 to correctly notify GA EPD with the current hazardous waste codes being used.

Does the facility accumulate solvent contaminated rags? ☐ YES ☐ NO ☒ X

If yes, how are they handled?

SECTION V: CONTINUED

B. WASTE STORAGE AREA(S)

1. Is there hazardous waste storage (90 day or 180 day)? Yes

WASTESTREAM & WASTE CODES	NUMBER & TYPE OF CONTAINER(S) (Specify Volume)	CONTAINER(S) MARKED HAZARDOUS WASTE §262.34(a)(3)	CONTAINER(S) MARKED WITH ACCUMULATION DATE §262.34(a)(2)	CONTAINER(S) CONDITION/COMPATIBILITY §265.171 & §265.172	CONTAINER(S) CLOSED §265.173	ADEQUATE AISLE SPACE §265.35
Spent lacquer thinner (D001, F003 & F005)	Two/55-gallon drums	No	No	Good/Metal	Yes	Yes

IGNITABLE OR REACTIVE WASTE STORED >50 FEET FROM PROPERTY LINE? (§265.176)	YES	X	NO		N/A	
ARE INCOMPATIBLE WASTE SEPARATED BY DIKE, BERM, WALL OR OTHER DEVICE? §265.177)	YES		NO		N/A	X

2. Is there universal waste storage? (Mercury-containing lamps or thermostats; batteries; pesticides) Yes

WASTESTREAM	NUMBER & TYPE OF CONTAINER(S) (Specify Volume)	CONTAINER(S) CLOSED §273.13	CONTAINER(S) MARKED UNIVERSAL WASTE §273.14	CONTAINER(S) MARKED WITH ACCUMULATION DATE §273.15
No universal waste storage was observed on the day of the inspection	N/A	N/A	N/A	N/A

COMMENTS:

Information was left with the facility regarding universal waste handling, storage and recycling.

SECTION V: CONTINUED

YES NO N/A VIOLATION

C. TANK STORAGE/TREATMENT

1. Does the facility use tanks to store or treat hazardous waste?
If yes, see Tank Systems Checklist for Generator

	X		
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D. EMERGENCY EQUIPMENT

1. Is the facility operated and maintained to minimize possibility of fire, explosion, or release of hazardous waste to the environment? (§265.31)

X			
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2. Does the facility have the following equipment to deal with hazards posed by waste handled: (§265.32)

a. Alarm system? (internal communication)

X			
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b. Telephone or 2 way radio?
(external communication)

X			
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c. Fire extinguisher?

X			
---	--	--	--

d. Water or foam and equipment, automatic sprinklers or water spray system? (If applicable)

X			
---	--	--	--

e. Are facility communication system, spill control equipment, fire protection equipment and decontamination equipment tested and maintained to ensure proper operation? (§265.33)

X			
---	--	--	--

f. Do personnel have immediate access to communication device or alarm system? (§265.34)

X			
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List type of device or if verbal communication used:

Telephones and Cell phones

COMMENTS:

SECTION VI: GENERAL RECORDS

	YES	NO	N/A	VIOLATION
1. Has the facility notified of hazardous waste generator activity? (§262.12)		X		X
2. Does the facility conduct the weekly inspections of containers storing hazardous waste? (§262.34) (§265.174)		X		X
3. Are waste profiles, waste analysis, or supporting documentation of waste determination per §262.11 in the facility's records? [§262.11, §262.40)(c)]	X			
4. Were Biennial Reports and Waste Reduction Plans submitted? [(§262.41), (O.C.G.A. §12-8-65.1)]			X	
5. Are copies of the biennial reports in the facility's records? (§262.40)			X	
6. Have arrangements with the local authorities been made to familiarize them with the facility, types of waste handled, and hazards posed? (§265.37)	X			
7. Does generator package waste in accordance with 49 CFR Parts 173, 178, and 179 (DOT requirements)? (§262.30)	X			
a. Does generator follow DOT labeling requirements in accordance with 49 CFR 172? (§262.31)	X			
b. Does generator mark each package in accordance with 49 CFR 172? [§262.32(a)]	X			
c. Is each container of 110 gallons or less marked with the following label? [§262.32(b)]	X			
<p>Hazardous Waste-Federal Law Prohibits Improper Disposal. If found, contact the nearest police or public safety authority or the U.S. Environmental Protection Agency.</p> <p>Generator Name and Address _____ Manifest Document Number _____</p>				
d. Is hazardous waste placarded before shipping off-site in accordance with the Department of Transportation's regulations for hazardous materials under 49 CFR part 172, subpart F? (§262.33)	X			

COMMENTS: Violation: Section 391-3-11-.04(3)- for failure to notify the Division as a small quantity generator within 30 days after generating spent lacquer thinner **40 CFR 174-** didn't inspect containers weekly in the 180-day storage area.

SECTION VII: CONTINGENCY PLAN

YES NO N/A VIOLATION

A. LARGE QUANTITY GENERATOR

- | | YES | NO | N/A | VIOLATION |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----|----|-----|-----------|
| 1. Does the facility have a written Contingency Plan (§265.51) or a written Spill Prevention, Control, and Countermeasures Plan (SPCC)? [§265.52(b)] | | | X | |
| 2. Does the Contingency Plan/SPCC Plan include: | | | | |
| a. Facility personnel action responses? §265.52(a) | | | X | |
| b. Description of agreement with the local authorities? [§265.52(c)] | | | X | |
| c. List of names, addresses, and phone numbers of emergency coordinators. Designates primary emergency coordinator, and list other coordinators in order of assumption of responsibility? [§265.52(d)] | | | X | |
| d. List of emergency equipment at the facility, including location, physical description and capabilities? [§265.52(e)] | | | X | |
| e. An evacuation plan for facility personnel? [§265.52(f)] | | | X | |
| 3. Have copies of the Contingency Plan/SPCC Plan been submitted to police, fire department, hospital, local emergency response teams? (§265.53) | | | X | |
| 4. Is the Contingency Plan/SPCC Plan amended when necessary? (§265.54) | | | X | |
| 5. Is at least one emergency coordinator on facility premises or on call? (§265.55) | | | X | |
| 6. Does the emergency coordinator respond immediately to emergencies, keep a record of these responses, and the report made to Federal, State, and local authorities, if required? (§265.56) | | | X | |

COMMENTS:

Facility operates as a SQG.

SECTION VII: CONTINUED

YES NO N/A VIOLATION

B. SMALL QUANTITY GENERATOR

1. Is the following information posted next to the telephone: [§262.34(d)(5)]

a. Name and telephone number of emergency coordinator?

	X		X
--	---	--	---

b. Location of fire extinguishers, spill control material and, if present, fire alarm?

	X		X
--	---	--	---

c. Telephone of the fire department if no direct alarm exists?

	X		X
--	---	--	---

2. Is at least one emergency coordinator on facility premises or on call? [§262.34(d)(5)(i)]

X			
---	--	--	--

3. Does emergency coordinator respond immediately to emergencies as expressed by [§262.34(d)(5)(iv)]?

X			
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COMMENTS:

40 CFR 262.34- for failure to post emergency information next to telephones.

Facility operates as a SQG.

SECTION VIII: PERSONNEL TRAINING

A. LARGE QUANTITY GENERATOR

YES NO N/A VIOLATION

1. Does facility have a personnel training program for hazardous waste management, consisting of classroom instruction or on the job training? [§265.16(a)(1)] (Note in Comment Session)

		X	
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- a. Is training directed by a person trained in hazardous waste management procedures? [§265.16(a)(2 and 3)]

		X	
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- b. Do personnel complete training within 6 months of employment or job assignments? [§265.16(b)]

		X	
--	--	---	--

- c. Do personnel take part in annual review of hazardous waste training? [§265.16(c)]

		X	
--	--	---	--

- d. Are the following documents maintained per §265.16(d):

1. Job title and name of employee? [§265.16(d)(1)]

		X	
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2. Job description? [§265.16(d)(2)]

		X	
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3. Amount and type of initial and continuing training to be given to each person filling a position? [§265.16(d)(3)]

		X	
--	--	---	--

2. Are records that document training and job experience given to and completed by personnel? [§265.16(d)(4)]

		X	
--	--	---	--

3. Are records kept until closure of facility or 3 years past employment of individual personnel? [§265.16(e)]

		X	
--	--	---	--

B. SMALL QUANTITY GENERATOR

1. Are employees thoroughly familiar with proper waste handling and emergency procedures as relevant to their responsibilities during normal facility operations and emergencies? [§262.34(d)(5)(iii)]

X			
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COMMENTS:

Facility operates as a SQG.

SECTION IX: MANIFEST/LAND DISPOSAL RESTRICTION

	YES	NO	N/A	VIOLATION
1. Are manifests kept in the facility's records for three years? [§262.40(a)]	X			
2. Did generator retain one copy of manifest signed by the generator and transporter for three years or until the facility received a signed copy from the designated permitted facility, which received the waste? [§262.23(a)(3)]	X			
3. Are manifests completed to include: (Part 262, Subpart B)				
a. Manifest Document Number?	X			
b. Generator's name, mailing address, telephone number?	X			
c. Generator's EPA ID Number?	X			
d. Transporter's name and EPA ID Number?	X			
e. TSD's facility name, address, and EPA ID Number?	X			
f. Waste information required by DOT: proper shipping name, quantity of waste, and type of container?	X			
4. Did generator sign and date all manifests? (Part 262, Appendix)	X			
5. Did generator obtain original carbon copy with handwritten signature and date of acceptance from initial transporter and the receiving TSD? [§262.23 (a)2 and (a)3]	X			
6. Did the generator file any exception reports? (§262.42)		X		
a. If so, are exception reports kept for three years? (§262.40)			X	
7. Has the generator determined that the facility is managing (§268.7):				
a. A land disposal restricted waste?	X			
b. A land disposal restricted waste that can be land disposed without any further treatment?		X		
c. A waste that is subject to an exemption from the land disposal restriction prohibition (i.e., A case-by-case exemption)?			X	

SECTION IX: CONTINUED

	YES	NO	N/A	VIOLATION
8. Does the land disposal restriction notification/certification include: (§268.7)				
a. EPA Hazardous Waste Numbers? (i.e. characteristics, listed waste) (§268.9)*	X			
b. Manifest number?	X			
c. Certification that the waste meets the treatment standards found in Part 268, Subpart D?			X	
d. Certification that the waste can be land disposed without any further treatment?			X	
e. Certification that the waste is exempt from land disposal restriction requirements and includes date, which this exemption applies?			X	
<p>*If a hazardous waste determination consists of both Listed and Characteristic EPA waste codes, the applicable LDR waste code can exclude the Characteristic waste code if the specific hazardous constituent responsible for that Characteristic is already addressed by the treatment standard for the Listed waste code (i.e., an ignitable, spent acetone solvent characterized as F003, D001 would have a LDR waste code of F003). Otherwise, all EPA waste codes subject to LDR must be cited.</p>				
9. Has facility notified designated TSD facility per requirements? [§268.7(a)(2)]	X			
10. Does facility maintain copies of LDR determinations, notifications, waste analysis, etc. relating to requirements in records for three years? [§268.7(a)(8)]	X			
11. Are any lab pack waste(s) shipped off-site? [§268.7(a)(9)]		X		
12. Does generator treat waste(s) in tanks or containers to comply with land disposal restriction requirements? [§268.7(a)(5)]		X		
a. Does Waste Analysis Plan include detailed chemical and physical analysis and all information to treat the waste(s)? [§268.7(a)(5)(i)]			X	

SECTION IX: CONTINUED

	YES	NO	N/A	VIOLATION
b. Has a copy of Waste Analysis Plan been submitted to Regional Administrator and Environmental Protection Division? [§268.7(a)(4)(ii)]			X	
i. Has submittal been verified? [§268.7(a)(4)(ii)]			X	
ii. Has facility notified designated TSD per Requirement? [§268.7(a)(3), §268.7(a)(4)]			X	
c. Does the generator treat wastes which exhibit a characteristic to render the waste non-hazardous and ships this waste to a subtitle D facility? [§268.9(d)]		X		
i. Was notice made to EPD?			X	
ii. Are copies of the notices kept in the facility's records?			X	
iii. Do the notices comply with the requirements in (§268.9)?			X	
13. Is this facility a small quantity generator whose waste is reclaimed under a contractual agreement [§262.20(e)]?		X		
a. Are the type(s) of waste and frequency of removal specified in the contract agreement?			X	
b. Is the vehicle used to transport waste to recycling facility and to deliver regenerated material back to the generator owned and operated by the reclaimer of the waste?			X	
c. Did generator maintain a copy of the reclamation agreement in the facility records for at least three years after termination or expiration of there agreement?			X	
d. Did generator maintain a copy of the initial land disposal restriction notification in the facility's records for at least three years after the termination or the expiration of the contract? [§268.7(a)(10)]			X	

COMMENTS:

SECTION X: USED OIL MANAGEMENT

YES NO N/A VIOLATION

A. USED OIL ACTIVITIES

1. Does this facility burn used oil fuel for energy recovery or market used oil fuel directly to such a burner? If yes, see Used Oil Management Checklist, (Section IX)

	X		
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2. Does the facility generate used oil?

X			
---	--	--	--

B. USED OIL STORAGE (279.22, 279.45, 279.54, 279.64)

1. Does the facility store used oil?

X			
---	--	--	--

2. Is the used oil stored in tanks, containers, or units subject to regulation under 40 CFR Parts 264 or 265?

X			
---	--	--	--

3. Are the containers and aboveground tanks in good condition with no leaks?

X			
---	--	--	--

4. Are containers, aboveground tanks, and fill pipes for underground storage tanks labeled or marked clearly with the words "Used Oil?"

X			
---	--	--	--

5. Have any releases of used oil to the environment occurred? (describe in comment section)

	X		
--	---	--	--

- a. Did the facility stop the release?

		X	
--	--	---	--

- b. Did the facility contain the released used oil?

		X	
--	--	---	--

- c. Did the facility clean up and manage properly the released used oil and other materials?

		X	
--	--	---	--

- d. Did the facility repair or replace any leaking storage containers or tanks to prevent future releases prior to returning them to service?

		X	
--	--	---	--

C. HAZARDOUS WASTE MIXING (279.21)

1. Does the generator mix hazardous waste with the used oil?

	X		
--	---	--	--

- a. Does the mixture exhibit any characteristics of hazardous waste? (If yes, regulated as hazardous waste under Part 262)

		X	
--	--	---	--

SECTION X: CONTINUED

YES NO N/A VIOLATION

- b. Does the used oil contain greater than 1,000 ppm total halogens? (If yes, presumed to be hazardous)

		X	
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D. ON-SITE BURNING IN SPACE HEATERS (279.23)

1. Does the generator burn used oil in used oil-fired space heaters?

	X		
--	---	--	--

- a. Does the generator burn only used oil generated at the facility or received from household do-it-yourself used oil generators?

		X	
--	--	---	--

- b. Is the heater designed to have a maximum capacity of not more than 0.5 million Btu per hour?

		X	
--	--	---	--

E. OFF-SITE SHIPMENTS (279.24)

1. Does the generator transport the facility's used oil or used oil from do-it-yourselfers to a used oil collection center?

	X		
--	---	--	--

- a. Is the used oil transported in a vehicle owned by the facility or an employee?

		X	
--	--	---	--

- b. Does the generator transport more than 55 gallons at any time?

		X	
--	--	---	--

- c. Is the collection center registered, licensed, permitted, or recognized by a state/county/municipal government to manage used oil?

		X	
--	--	---	--

2. Does the generator transport the facility's used oil to an aggregation point?

	X		
--	---	--	--

- a. Is the used oil transported in a vehicle owned/operated by the facility or an employee?

		X	
--	--	---	--

- b. Does the generator transport more than 55 gallons at any time?

		X	
--	--	---	--

- c. Is the aggregation point owned and/or operated by the same generator?

		X	
--	--	---	--

SECTION X: CONTINUED

	YES	NO	N/A	VIOLATION
3. Does the generator have a contractual agreement pursuant to which reclaimed oil is returned by the processor/re-refiner to the generator for use as a lubricant, cutting oil, or coolant?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
a. Does the contract indicate the type of used oil and the frequency of shipments?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
b. Does the contract indicate that the vehicle used to transport the used oil to the processing/re-refining facility and to deliver recycled used oil back to the generator is owned and operated by the used oil processor/re-refiner?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
c. Does the contract indicate that reclaimed oil will be returned to the generator?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
4. Does the generator ensure that the used oil is transported only by transporters who have obtained EPA identification numbers?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

F. USED OIL FILTER EXCLUSION [261.4(b)(13)]

1. Does the generator manage used oil filters?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
a. Are the filters non-terne plated?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
b. Are the filters gravity hot-drained?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

Please list all businesses that handle the facility's used oil. Include the address(es) and EPA Identification Number(s).

COMMENTS:

Used oil is generated from the maintenance on machines and is stored in 55-gallon drums and other small containers.

Used oil is transported for recycling and managed by Dato, LLC, Macon, Georgia (GAD003323078).

SECTION XI: OTHER ACTIVITIES

A. How long has the company been at this site? For 25 years

B. Is there one or more septic tanks on-site?

YES		NO	X
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1. If yes, how many?
2. How old are they?
3. Where are they?
4. Are they still in use?
5. What is the purpose of these septic tanks?

C. Is the facility on the Hazardous Sites Inventory?

YES		NO	X
-----	--	----	---

1. If yes, what is the Hazardous Sites Inventory number?
2. Why is the facility listed on the Hazardous Sites Inventory?

E. Does the facility dispose of any waste materials on-site?

YES		NO	X
-----	--	----	---

1. If yes, explain and include whether the disposal site is open or closed, how many sites there are, and permit number for each. Obtain a copy of the permit and permit conditions to attach to the report.

F. Does the facility have an Environmental Management System (EMS)?

YES		NO	X
-----	--	----	---

1. If yes, was it available for review during the inspection?

YES		NO	N/A
-----	--	----	-----

2. Is the facility a member of EPA's Performance Track?

YES		NO	X
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Facility Name:

US Technology Aerospace Engineering

Brief description of what facility does:

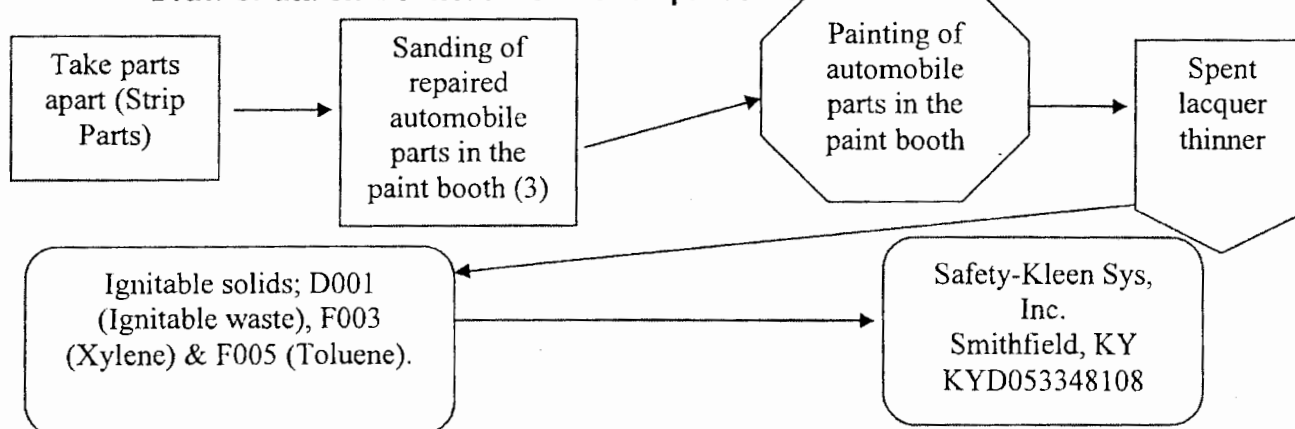
US Technology Aerospace Engineering is a steel fabrication company that specializes in painting and depainting aerospace vehicles. Hazardous waste is generated from the painting of aircraft parts.

Complete the table for each hazardous waste stream.

WASTESTREAM & WASTE CODE(S)	TREATMENT, STORAGE, & DISPOSAL FACILITY	EPA IDENTIFICATION NUMBER
Spent lacquer thinner (D001, F003 & F005)	Safety-Kleen Systems, Inc. Smithfield, KY	KYD053348108

Complete the table for each non-hazardous waste stream.

WASTESTREAM/SCRAP/RECYCLABLES	SOLID WASTE COLLECTOR	SOLID WASTE DISPOSAL FACILITY'S PERMIT NUMBER
Solid Waste (Trash)	Veolia ES Pecan Row Landfill, LLC	PBR-092-019D (MSWL)
Scrap Metal	Macon Iron & Paper	Recycling

Draw or attach a schematic of each process:

Other Comments: There are approximately fourteen employees, which work one shift. Property sits on eight acres of land and has three buildings that it operates out of.

ATTACHMENT

A

PHOTOS



Site Name: US Technology Aerospace Eng. Picture 1 of 10 County Name: Peach

Date: 7/6/11 Photographer: Marvin Woods, Hazardous Waste Compliance Program

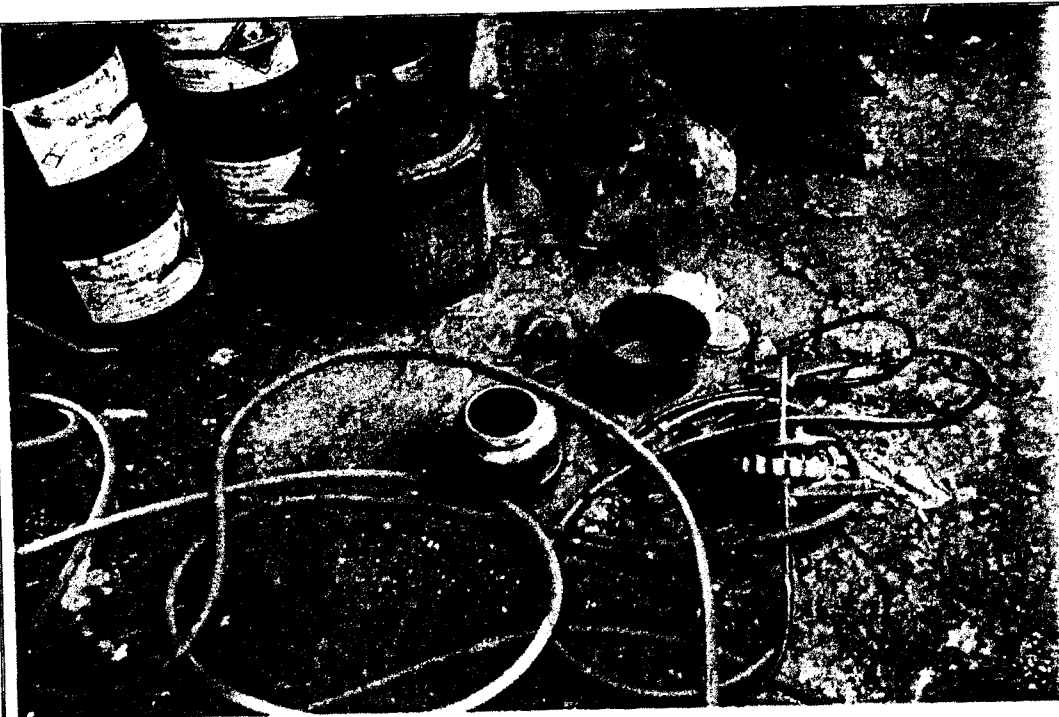
Explanation: Two 55-gallon drums of spent lacquer thinner drums with no start accum. date and no hazardous waste label.



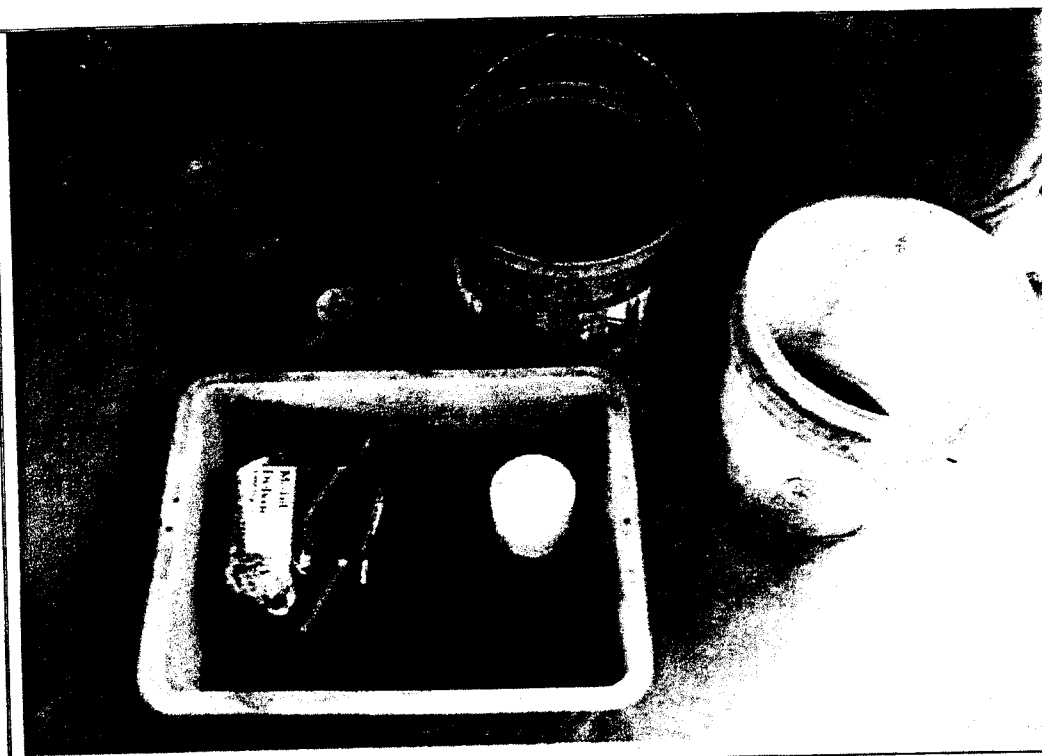
Site Name: US Technology Aerospace Eng. Picture 2 of 10 County Name: Peach

Date: 7/6/11 Photographer: Marvin Woods, Hazardous Waste Compliance Program

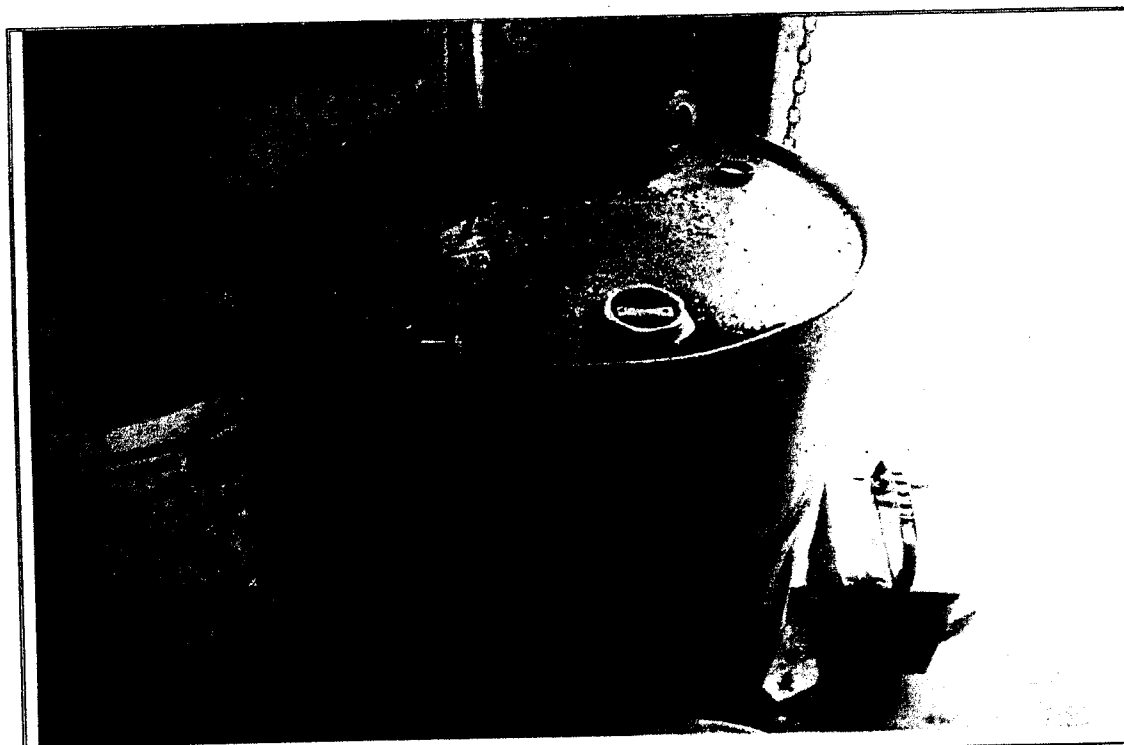
Explanation: Two 55-gallon drums not labeled "Used Oil".



Site Name: US Technology Aerospace Eng. Picture 3 of 10 County Name: Peach
 Date: 7/6/11 Photographer: Marvin Woods, Hazardous Waste Compliance Program
 Explanation: One 5-gallon drum not labeled in the satellite accumulation area.



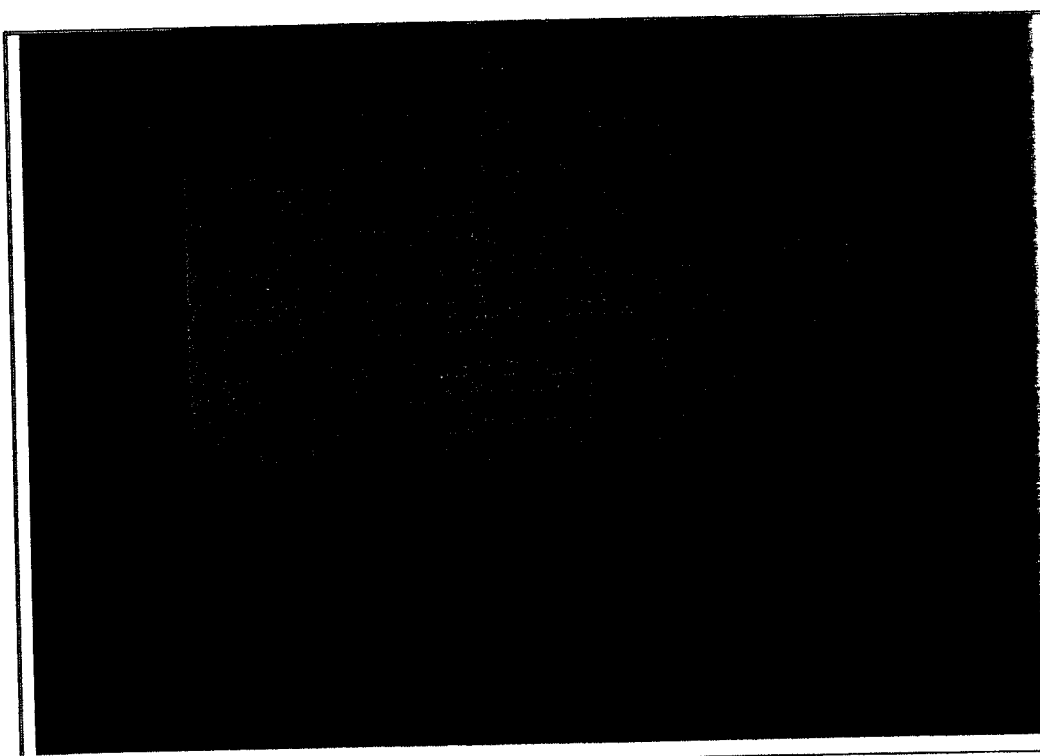
Site Name: US Technology Aerospace Eng. Picture 4 of 10 County Name: Peach
 Date: 7/6/11 Photographer: Marvin Woods, Hazardous Waste Compliance Program
 Explanation: Used oil containers not labeled with the words "Used Oil."



Site Name: US Technology Aerospace Eng. Picture 5 of 10 County Name: Peach

Date: 7/6/11 Photographer: Marvin Woods, Hazardous Waste Compliance Program

Explanation: Used oil containers not labeled with the words "Used Oil."



Site Name: US Technology Aerospace Eng. Picture 6 of 10 County Name: Peach

Date: 7/6/11 Photographer: Marvin Woods, Hazardous Waste Compliance Program

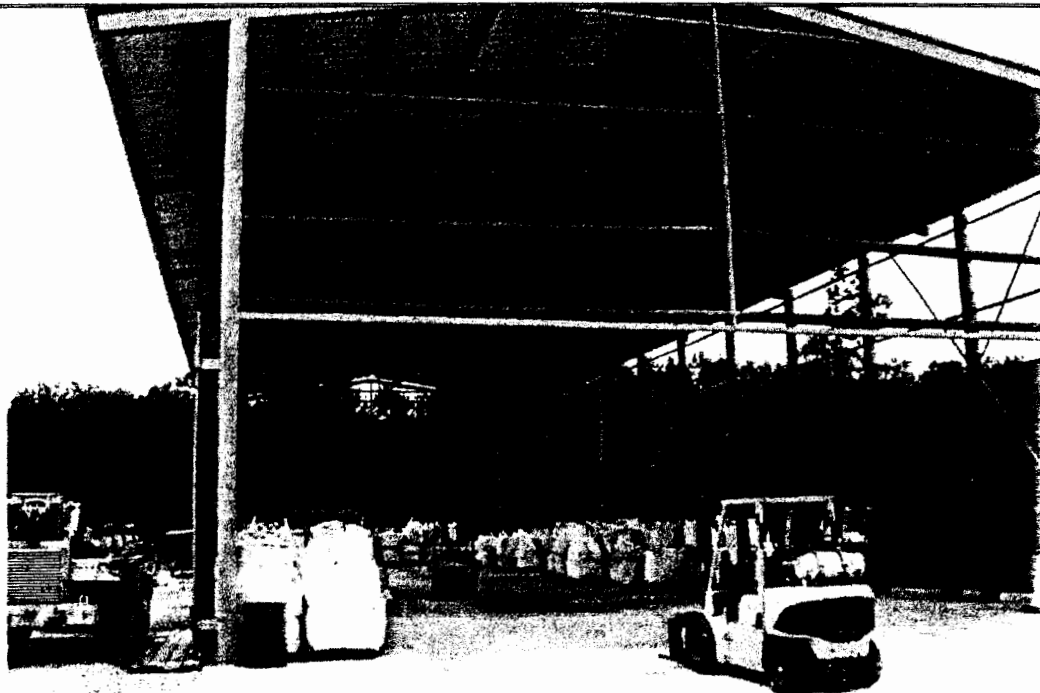
Explanation: Weekly drum inspections not being conducted in the 180-day storage area.



Site Name: US Technology Aerospace Eng. Picture 7 of 10 County Name: Peach

Date: 7/6/11 Photographer: Marvin Woods, Hazardous Waste Compliance Program

Explanation: No emergency information posted next to the telephones.



Site Name: US Technology Aerospace Eng. Picture 8 of 10 County Name: Peach

Date: 7/6/11 Photographer: Marvin Woods, Hazardous Waste Compliance Program

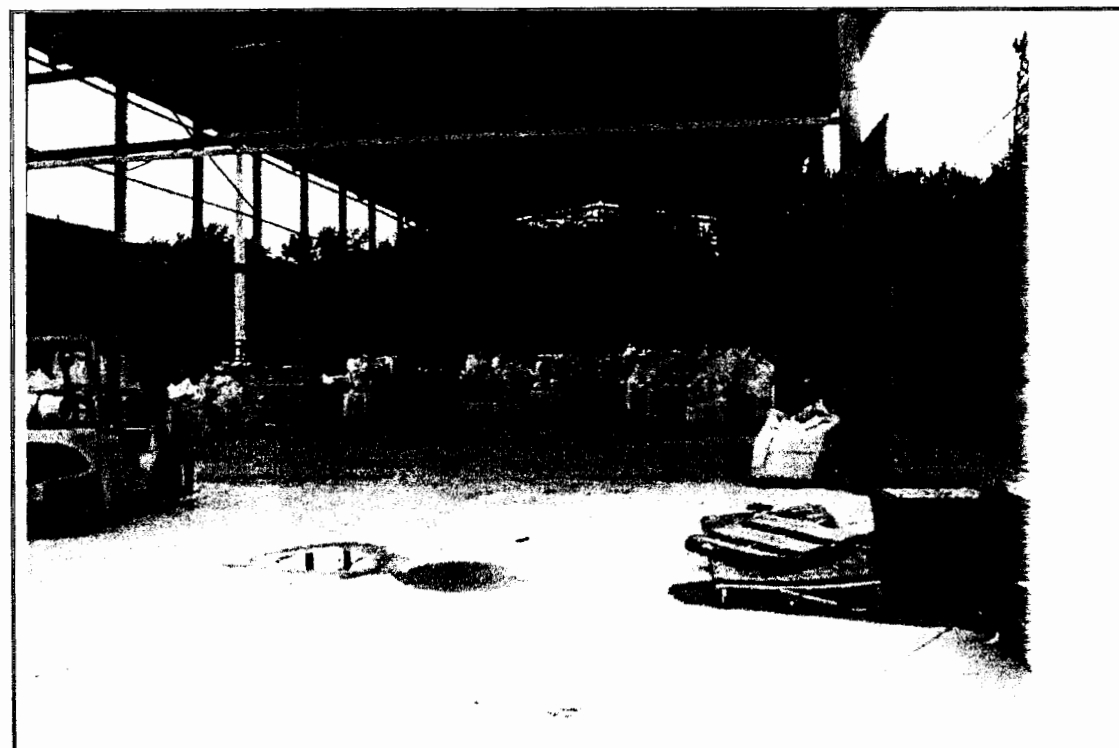
Explanation: Spent blast media stored in an outside storage area.



Site Name: US Technology Aerospace Eng. Picture 9 of 10 County Name: Peach

Date: 7/6/11 Photographer: Marvin Woods, Hazardous Waste Compliance Program

Explanation: Spent blast media stored on the inside of the facility on pallets.



Site Name: US Technology Aerospace Eng. Picture 10 of 10 County Name: Peach

Date: 7/6/11 Photographer: Marvin Woods, Hazardous Waste Compliance Program

Explanation: Another view of spent blast media stored outside.

c: Jan Simmons

Georgia Department of Natural Resources

2 Martin Luther King, Jr. Drive, SE, Suite 1154 East, Atlanta, Georgia 30334-9000

Chris Clark, Commissioner

Environmental Protection Division

F. Allen Barnes, Director

PHONE 404/656-7802 FAX 404/651-9425

February 19, 2010

James I. Palmer, Jr.
Butler, Snow, O'Mara, Stephens, and Cannada
Crescent Center
6075 Poplar Avenue, Fifth Floor
Memphis, TN 38119

SUBJECT: Request for Regulatory Interpretation
Spent Plastic Blast Media/Sealtech Blocks

Dear Mr. Palmer:

The Environmental Protection Division (EPD) has reviewed your letter of February 10, 2010, providing additional information regarding the U.S technology Corporation's Sealtech blocks. Based on that information, it has been determined that my letter of October 14, 2009, warrants revision. Attached please find a revised letter incorporating changes to which mutual agreement has been reached. The attached letter supercedes my letter of October 14, 2009.

Please feel free to contact me if I can be of further assistance.

Sincerely,



Mark Smith, Chief
Land Protection Branch

File: Regulatory Interpretations
Variance Committee Correspondence

Cc: Mr. Raymond F. Williams, President
US Technology Corporation
1446 W. Tuscarawas Street
Canton, Ohio 44702

Lee A. DeHihns, III
Alston and Bird
1201 Peachtree Center
Atlanta, GA 30309-3424

Georgia Department of Natural Resources

2 Martin Luther King, Jr. Drive, SE, Suite 1154 East, Atlanta, Georgia 30334-9000

Chris Clark, Commissioner

Environmental Protection Division

F. Allen Barnes, Director

PHONE 404/656-7802 FAX 404/651-9425

February 19, 2010

Mr. Raymond F. Williams
President
US Technology Corporation
1446 W. Tuscarawas Street
Canton, Ohio 44702

SUBJECT: Request for Regulatory Interpretation
Spent Plastic Blast Media/Sealtech Blocks

Dear Mr. Williams:

The Environmental Protection Division (EPD) has reviewed your request for our agency to issue a regulatory determination regarding the recycling of spent blast media (SBM), used as an ingredient in the manufacture of beneficial products such as Sealtech architectural concrete masonry blocks, and to determine if this media qualifies for applicable recycling exemptions under regulations promulgated under the Resource Conservation and Recovery Act. In addition, you requested that our regulatory determination specify that such exemptions continue to apply in the event such products are applied in a manner that might constitute incidental contact with the land.

Based upon the information that was submitted to EPD, we concur that the proposed use/recycle scenario that you presented, specifically, that the recycled spent blast media, when recycled as described, would be exempt from the Georgia Rules for Hazardous Waste Management under 391-3-11-.07(1) of those Rules [which incorporates 40 CFR 261.2(e)(1)(i) by reference]. This letter *does not constitute a concurrence* of opinion or any type of endorsement. Under the Georgia Rules, the generator of materials that may be hazardous waste is responsible for verifying that anyone receiving or using those materials does so in a manner that does not jeopardize its exemption from hazardous waste status.

While, based on the information submitted, it appears that there are benefits from the use of blast media in the making of the concrete masonry blocks, additional criteria must be met, including:

- Ensuring that sham recycling is not occurring, using the additional criteria set forth in the attachment to the April 26, 1989 USEPA memo from Sylvia Lowrance (copy attached). While several of the criteria have been addressed in your submittal, additional criteria, such as, ensuring that the secondary material is similar to an analogous raw material or product (does it contain Appendix VIII constituents or exhibit a hazardous characteristic that the analogous raw material/product would not, are analogous amounts of material used, etc.), ensuring there is a market for the end product, etc.

Mr. Raymond F. Williams
February 19, 2010
Page 2 of 3

- Note that the Georgia Rules additionally incorporate by reference §261.2(e)(2). Therefore, the solid waste exemption is lost if the materials are:
 - i. Used in a manner constituting disposal, or used to produce products that are applied to the land; or
 - ii. Burned for energy recovery, used to produce a fuel, or contained in fuels; or
 - iii. Accumulated speculatively; or
 - iv. Listed in paragraphs §261.2(d)(1) and (d)(2) of the 40 CFR, which are incorporated into the Georgia Rules by references.

Compliance with common building code standards such as International Building Code and Standards (IBC) Section 1807(which requires damp proofing barriers between Sealtech blocks and soil or mechanical barriers of separation such as aggregate or polymer board), American Society of Testing and Materials (ASTM) C 1372 (Standard Specification for Segmental Retaining Wall Units), and National Concrete Masonry Association (NCMA) Guide TEK 15-8A (Guide to Segmental Retaining Walls) are satisfactory demonstrations in Georgia that Sealtech blocks are not products being applied to the land or used in a manner constituting disposal.

We further take this opportunity to remind the generators, US Technology, Sealtech, their licensees and others who manage the SBM, intermediates, or products of the following:

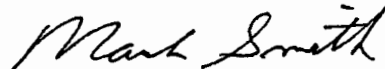
1. Any spillage of the SBM that fails the TCLP prior to spillage, if not immediately recovered and used as a beneficial ingredient in the manufacture of the concrete masonry blocks, is hazardous waste, and must be managed as such.
2. As identified above [reference §261.2(e)(2)], Sealtech blocks that are applied to the land or used in a manner that constitutes disposal results in a loss of the solid waste exemption. Authorized licensees, installers, or others failing to comply with this provision render the exemption moot, as codified at 40 CFR 261.2(e)(2)(i).
3. As with all waste materials:
 - a. All end users of Sealtech blocks must make a hazardous waste determination on any block to be disposed of,
 - b. No block that fails the TCLP test may be disposed of in a RCRA Subtitle D or construction/demolition waste landfill.

Thank you for the information you submitted in your February 2, 2010 supplemental letter regarding the testing program U.S. Technology has in place to ensure that Sealtech blocks pass the TCLP test before they leave the manufacturing facility. End users may rely on the data maintained by U.S. Technology in lieu of independent testing, if they so desire.

Mr. Raymond F. Williams
February 19, 2010
Page 3 of 3

Please contact Jan Simmons or Renée Hudson Goodley of my staff, at 404-656-7802 if you have any questions regarding this matter.

Sincerely,

A handwritten signature in cursive script that reads "Mark Smith".

Mark Smith, Chief
Land Protection Branch

File: Regulatory Interpretations
Variance Committee Correspondence

James I. Palmer, Jr.
Butler, Snow, O'Mara, Stephens, and Cannada
Crescent Center
6075 Poplar Avenue, Fifth Floor
Memphis, TN 38119

Lee A. DeHihns, III
Alston and Bird
1201 Peachtree Center
Atlanta, GA 30309-3424



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
WASHINGTON, D.C. 20460

emo - you ready (WPS)
WES
WCS
STATES
ORC
ESD

APR 26 1989

OFFICE OF
SOLID WASTE AND EMERGENCY RESP.

MEMORANDUM

SUBJECT: F006 Recycling

FROM: Sylvia K. Lowrance, Director
Office of Solid Waste (OS-300)

TO: Hazardous Waste Management Division Directors
Regions I-X

It has come to the attention of EPA Headquarters that many of the Regions and authorized States are being requested to make determinations on the regulatory status of various recycling schemes for F006 electroplating sludges. In particular, companies have claimed that F006 waste is being recycled by being used as: (1) an ingredient in the manufacture of aggregate, (2) an ingredient in the manufacture of cement, and (3) feedstock for a metals recovery smelter. The same company may make such requests of more than one Region and/or State. Given the complexities of the regulations governing recycling vs. treatment and the definition of solid waste, and the possible ramifications of determinations made in one Region affecting another Region's determination, it is extremely important that such determinations are consistent and, where possible, coordinated.

Two issues are presented. The first issue is whether these activities are legitimate recycling, or rather just some form of treatment called "recycling" in an attempt to evade regulation. Second, assuming the activity is not sham recycling, the issue is whether the activity is a type of recycling that is subject to regulation under sections 261.2 and 261.6 or is it excluded from our authority.

With respect to the issue of whether the activity is sham recycling, this question involves assessing the intent of the owner or operator by evaluating circumstantial evidence, always

a difficult task. Basically, the determination rests on whether the secondary material is "commodity-like." The main environmental considerations are (1) whether the secondary material truly has value as a raw material/product (i.e., is it likely to be abandoned or mismanaged prior to reclamation rather than being reclaimed?) and (2) whether the recycling process (including ancillary storage) is likely to release hazardous constituents (or otherwise pose risks to human health and the environment) that are different from or greater than the processing of an analogous raw material/product. The attachment to this memorandum sets out relevant factors in more detail.

If the activity is not a sham, then the question is whether it is regulated. If F006 waste is used as an ingredient to produce aggregate, then such aggregate would remain a solid waste if used in a manner constituting disposal (e.g., road-base material) under sections 261.2(c)(1) and 261.2(e)(2)(i) or if it is accumulated speculatively under section 261.2(e)(2)(iii). Likewise, the F006 "ingredient" is subject to regulation from the point of generation to the point of recycling. The aggregate product is, however, entitled to the exemption under 40 CFR 266.20(b), as amended by the August 17, 1988, Land Disposal Restrictions for First Third Scheduled Wastes final rule (see 53 FR 31197 for further discussion). However, if the aggregate is not used on the land, then the materials used to produce it would not be solid wastes at all, and therefore neither those materials nor the aggregate would be regulated (see section 261.2(e)(1)(i)).

Likewise, cement manufacturing using F006 waste as an ingredient would yield a product that remains a solid waste if it is used in a manner constituting disposal, also subject to section 266.20(b). There is an additional question of whether the cement kiln dust remains subject to the Bevill exclusion. In order for the cement kiln dust to remain excluded from regulation, the owner or operator must demonstrate that the use of F006 waste has not significantly affected the character of the cement kiln dust (e.g., demonstrate that the use of F006 waste has not significantly increased the levels of Appendix VIII constituents in the cement kiln dust leachate). [NOTE: This issue will be addressed more fully in the upcoming supplemental proposal of the Boiler and Industrial Furnace rule, which is pending Federal Register publication.]

For F006 waste used as a feedstock in a metals recovery smelter, the Agency views this as a recovery process rather than use as an ingredient in an industrial process and, therefore, considers this to be a form of treatment that is not currently regulated (see sections 261.2(c) and 261.6(c)(1)). Furthermore, because this is a recovery process rather than a production process, the F006 waste remains a hazardous waste (and must be

managed as such prior to introduction to the process), and the slag from this process would normally be considered a "derived from" F006 waste. However, for primary smelters, the slag may be considered subject to the Bevill exclusion provided that the owner or operator can demonstrate that the use of F006 waste has not significantly affected the hazardous constituent content of the slag (i.e., make a demonstration similar to the one discussed above for the cement kiln dust). [NOTE: In the supplemental proposal of the Boiler and Industrial Furnace rule noted above, the Agency will be proposing a definition of "indigenous waste" based on a comparison of the constituents found in the waste to the constituents found in an analogous raw material. Should the F006 waste meet the definition of an "indigenous waste," the waste would cease to be a waste when introduced to the process and the slag would not be derived from a hazardous waste.]

Also, you should be aware that OSW is currently reevaluating the regulations concerning recycling activities, in conjunction with finalizing the January 8, 1988 proposal to amend the Definition of Solid Waste. While any major changes may depend on RCRA reauthorization, we are considering regulatory amendments or changes in regulatory interpretations that will encourage on-site recycling, while ensuring the protection of human health and the environment.

Headquarters is able to serve as a clearinghouse to help coordinate determinations on whether a specific case is "recycling" or "treatment" and will provide additional guidance and information, as requested. Ultimately, however, these determinations are made by the Regions and authorized States. Attached to this memorandum is a list of criteria that should be considered in evaluating the recycling scheme. Should you receive a request for such a determination, or should you have questions regarding the criteria used to evaluate a specific case, please contact Mitch Kidwell, of my staff, at FTS 475-8551.

Attachment

CRITERIA FOR EVALUATING WHETHER A WASTE IS BEING RECYCLED

The difference between recycling and treatment is sometimes difficult to distinguish. In some cases, one is trying to interpret intent from circumstantial evidence showing mixed motivation, always a difficult proposition. The potential for abuse is such that great care must be used when making a determination that a particular recycling activity is to go unregulated (i.e., it is one of those activities which is beyond the scope of our jurisdiction). In certain cases, there may be few clear-cut answers to the question of whether a specific activity is this type of excluded recycling (and, by extension, that a secondary material is not a waste, but rather a raw material or effective substitute); however, the following list of criteria may be useful in focusing the consideration of a specific activity. Here too, there may be no clear-cut answers but, taken as a whole, the answers to these questions should help draw the distinction between recycling and sham recycling or treatment.

- (1) Is the secondary material similar to an analogous raw material or product?
 - o Does it contain Appendix VIII constituents not found in the analogous raw material/product (or at higher levels)?
 - o Does it exhibit hazardous characteristics that the analogous raw material/product would not?
 - o Does it contain levels of recoverable material similar to the analogous raw material/product?
 - o Is much more of the secondary material used as compared with the analogous raw material/product it replaces? Is only a nominal amount of it used?
 - o Is the secondary material as effective as the raw material or product it replaces?
- (2) What degree of processing is required to produce a finished product?
 - o Can the secondary material be fed directly into process (i.e., direct use) or is reclamation (or pretreatment) required?
 - o How much value does final reclamation add?

- (3) What is the value of the secondary material?
 - o Is it listed in industry news letters, trade journals, etc.?
 - o Does the secondary material have economic value comparable to the raw material that normally enters the process?
- (4) Is there a guaranteed market for the end product?
 - o Is there a contract in place to purchase the "product" ostensibly produced from the hazardous secondary materials?
 - o If the type of recycling is reclamation, is the product used by the reclaimer? The generator? Is there a batch tolling agreement? (Note that since reclaimers are normally TSDFs, assuming they store before reclaiming, reclamation facilities present fewer possibilities of systemic abuse).
 - o Is the reclaimed product a recognized commodity? Are there industry-recognized quality specifications for the product?
- (5) Is the secondary material handled in a manner consistent with the raw material/product it replaces?
 - o Is the secondary material stored on the land?
 - o Is the secondary material stored in a similar manner as the analogous raw material (i.e., to prevent loss)?
 - o Are adequate records regarding the recycling transactions kept?
 - o Do the companies involved have a history of mismanagement of hazardous wastes?
- (6) Other relevant factors.
 - o What are the economics of the recycling process? Does most of the revenue come from charging generators for managing their wastes or from the sale of the product?
 - o Are the toxic constituents actually necessary (or of sufficient use) to the product or are they just "along for the ride."

These criteria are drawn from 53 FR at 522 (January 8, 1988); 52 FR at 17013 (May 6, 1987); and 50 FR at 638 (January 4, 1985).



ERNIE FLETCHER
GOVERNOR

ENVIRONMENTAL AND PUBLIC PROTECTION CABINET
DEPARTMENT FOR ENVIRONMENTAL PROTECTION
DIVISION OF WASTE MANAGEMENT
HAZARDOUS WASTE BRANCH
14 REILLY ROAD
FRANKFORT, KENTUCKY 40601
www.kentucky.gov

LAJUANA S. WILCHER
SECRETARY

August 4, 2006

Mr. James Swinderman
US Technologies Corporation
1446 West Tuscarawas Street
Canton, OH 44702

RE: Hazardous Waste Determination Request
Spent blast media used in compression formed or cast products

Dear Mr. Swinderman,

The Division of Waste Management received a hazardous waste determination request from US Technologies Corporation on April 10, 2006 regarding the waste status of spent blast media (SBM) used in compression formed or cast products such as masonry block.

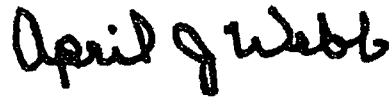
From the information submitted it is the Division's understanding that the SBM in question, containing certain metals and pigments incurred from blasting operations, is not only a suitable replacement but often a superior material to the traditionally used commercial chemical products. Pursuant to 401 KAR 51:010 Section 2 (5)(a)(2), materials are not wastes when they are shown to be recycled by being "used or reused as effective substitutes for commercial chemical products." Therefore the SBM addressed above is not considered a waste when recycled in the manner described and is not subject to hazardous waste regulations.

Please note that this determination is reliant on the SBM being used in the described recycling process. Material which is speculatively accumulated on the basis that it could be used in the recycling process would be considered a waste. It is important to be able to demonstrate that the material is not being accumulated speculatively and is actually being used in your processes.

Mr. Swinderman
2 of 2
August 4, 2006

This determination does not exclude US Technology Corporation from obtaining the necessary permits or authorization from any other local, state, or federal agencies. If you have any questions regarding this letter or other concerns, please contact Aaron Newton at (502) 564-6716 ext. 269.

Sincerely,

A handwritten signature in black ink that reads "April J. Webb". The signature is written in a cursive, slightly slanted style.

April J. Webb P.E., Manager
Hazardous Waste Branch

AJW/amn

c: Otis Johnson, EPA Region 4
Carlos Merizalde, EPA Region 4
Aaron Newton, Hazardous Waste Branch
Reading File



Florida Department of Environmental Protection

Bob Martinez Center
2600 Blairstone Road
Tallahassee, Florida 32399-2400

Charlie Crist
Governor

Jeff Kottkamp
Lt. Governor

Michael W. Sole
Secretary

September 7, 2007

Mr. James Swinderman
Director, Corporate Administration
US Technology
1446 West Tuscarawas Street
Canton, Ohio 44702

Dear Mr. Swinderman:

This is in response to your letter of October 26, 2006 regarding the regulatory status of spent blasting material (SBM) when recycled as a substitute ingredient in the manufacture of cast polymer products at your Bolivar, Ohio facility.

40 Code of Federal Regulations (CFR) 261.2 (e) (1) (i) states that materials are not a solid waste when shown to be recycled by being used or reused as ingredients in an industrial process to make a product, provided that the materials are not being reclaimed, burned for energy recovery, accumulated speculatively prior to recycling, or used in a product placed on the land [see 40 CFR 261.2(e) (2) (ii) and (iii)]. The documentation submitted in support of your request adequately demonstrates a legitimate recycling program under these provisions.

The information you provided states that products containing hazardous constituents will not be applied to the land, and this response relies on that representation. The Department is aware that the State of Missouri Department of Natural Resources has imposed certain packaging requirements to ensure the product derived from material processed under the exemption is not sold for use on the land. Florida's response to your request for recognition of the recycling exclusion is based in part on compliance with Missouri's requirements. Otherwise the provisions of 40 CFR 261.2(e) (2) (i), 40 CFR 266.20 and 266.22, and the Land Disposal Restrictions (LDRs) of 40 CFR Part 268 would have to be addressed. The first section states that materials are solid wastes when they are used to produce products that are applied to the land, while the second exempts from regulation products made from recyclable material (and placed on the land) "if the recyclable materials have undergone a chemical reaction in the course of producing the product so as to have become inseparable by physical means." The

Mr. James Swinderman
September 7, 2007
Page Two

Department interprets these provisions together, so that in a legitimate recycling program under 40 CFR 261.2(e)(1)(i), the exemption from the definition of solid waste applies if the final product has undergone a sufficient chemical reaction so as to meet all applicable LDR's.

However, 40 CFR 266.22 states that "owners or operators of facilities that store recyclable materials that are to be used in a manner that constitutes disposal, but who are not the ultimate users of the materials, are regulated under all applicable provisions of subparts A through L of parts 264 and 265 and parts 270 and 124 of this chapter and the notification requirement under section 3010 of RCRA." This applies to generators as well as recyclers of such materials.

The information you provided states that your products have been chemically tested by Stark EnviroLabs, Inc. for comparison with LDRs, which are the Universal Treatment Standards (UTS) found in 40 CFR 268.48. The tests were either the Toxicity Characteristic Leaching Procedure (TCLP) or a laboratory method which detects total concentrations. All results were less than the applicable UTS. Monitoring data provided to the State of Ohio confirms that the powdered raw material and the finished product are within the LDR guidelines. The Department would consider any powder or product that exceeded LDR/UTS to contain an unacceptable level of toxicity, whether or not the product was sold for use on the land.

The laboratory results you provided were for a product containing 10%-15% spent plastic blast material. Please note that the exclusion acknowledged in this letter shall not apply if you change or alter the percentage or constituents of SBM used in your products, until laboratory testing confirms that the powder and the product meet LDR/UTS.

The Department is also aware that speculative accumulation as defined in 40 CFR 261.2(c) has been a problem at US Technology manufacturing plants. Compliance with State of Mississippi Department of Quality order number 4614-03 is another factor in the Department's evaluation of US Technology's claim regarding the product exclusion.

Please be advised that pursuant to 40 CFR 261.2(f), persons claiming that a material is not a solid waste have the burden of demonstrating with appropriate documentation that the terms of the exclusion are met. In addition, the owner or operator of the facility claiming they are actually recycling must show they have the necessary equipment to do so. This is a continuing obligation.

Mr. James Swinderman
September 7, 2007
Page Three

The interpretations of state and federal regulations with respect to your inquiry are made to the best of our knowledge and belief based on the specific processes and results described in your correspondence, and specifically based on the product stewardship nature of US Technology's recycling program. This is not a general determination that all recycled spent blasting media is exempted from the definition of solid waste. If representations in your correspondence are incorrect, incomplete, or change over time, the interpretation may not be applicable. This information may not apply to a particular set of facts or circumstances and should not be used as a statewide guidance.

If you have any questions, please call Michael Redig or John Erickson of the Hazardous Waste Regulation Section at (850)245-8707.

Sincerely,



Michael X. Redig
Environmental Manager
Hazardous Waste Regulation Section

MXR/jeh

cc: Augusta Posner, Office of General Counsel
Susan Horlick, Guidance Series
District Hazardous Waste Coordinators

BUTLER | SNOW

October 7, 2009

Mr. Mark Smith, Chief
Hazardous Waste Management Branch
Georgia Environmental Protection Division
2 Martin Luther King Drive SE
Suite 1154, East Tower
Atlanta, GA 30334

In Re: U. S. Technology Corporation Request for Regulatory Determination

Dear Mr. Smith:

Butler Snow represents U. S. Technology Corporation (UST), which is headquartered in Canton, OH. Mr. Raymond F. Williams serves as CEO. Mr. Lee A. DeHihns, III, of Alston and Bird, is assisting us as local counsel.

UST manufactures plastic blasting media that is used by United States military installations, NATO installations, defense contractors, and private companies to depaint aircraft and other equipment. UST then recycles the spent blasting media (SBM) and sends it to their licensees for use as filler in the manufacture of Sealtech architectural concrete masonry blocks, which are then used as a construction material. Sealtech is a wholly owned subsidiary of UST, and Mr. Williams was awarded United States Patent No. US 7,438,757 B2 for his new technology for making concrete blocks on October 21, 2008, and United States Patent No. US 7,476,273 B2 for his Sealtech design on January 13, 2009 (information enclosed).

In Georgia, Warner Robins Air Force Base is the principal customer of UST. Other customers of UST are Aviall, Inc. and Precision Electronics, LLC. UST owns and operates three facilities in Georgia. The combined annual revenues for all three are about \$10 million; and their combined annual payroll, for 56 employees, is about \$2 million. The locations and functions of these UST facilities are as follows:

Allied

1. ***U. S. Technology Services, 380 Industrial Parkway, Macon, GA:***

Handles new media shipments and materials for the U. S. Air Force (Warner Robins AFB) and NATO installations; manufactures aircraft wiring integrity testers and the Aerial Multi-Axis Platform for depainting large aircraft (principally the C130 Hercules, the C17 Globemaster, and the C5 Galaxy).

Post Office Box 171443
Memphis, TN 38187-1443

JAMES I. PALMER, JR.
901.680.7350
jimmy.palmer@butlersnow.com

Crescent Center
6075 Poplar Avenue, 5th Floor
Memphis, TN 38119

T 901.680.7200 • F 901.680.7201 • www.butlersnow.com

BUTLER, SNOW, O'MARA, STEVENS & CANNADA, PLLC

Alfred
2. ***U.S. Technology, 555 Industrial Parkway, Macon, GA.:***

Warehouse for SBM used as fill material in the manufacture of Sealtech blocks; operates the ABM recycling process; ships recycled product to UST licensees in Georgia for the manufacture of Sealtech blocks.

3. ***U. S. Technology Aerospace Engineering Division, Hwy. 49, Byron, GA.:***

Fabricates aircraft maintenance equipment and workstands for use in support of U. S. Air Force depainting operations at Warner Robins AFB.

About ten days or so ago, Mr. Williams was contacted by IAP-HILL, Regional Base Operating Support, Navy Region Southeast, about responding to a Navy Request for Proposals (RFP) to award a contract for plastic media blasting services in support of depainting operations for Navy aircraft. As with the Air Force depainting operations supported by UST at Warner Robins, the Navy will require the supply, recovery, and recycling of plastic blasting media which is used in the depainting process. In essence, the Navy wants to continue their conversion of its depainting operations from traditional, wet chemical stripping to dry plastic blasting media stripping as the Air Force is also doing (especially at Warner Robins). Because EPD was very much involved in initiating the Air Force conversion at Warner Robins, I need not recite the many environmental benefits that have been realized in Houston County because of your leadership and the cooperation of the Air Force.

Until 2001, UST held Navy contracts like the one that will soon be awarded. Unfortunately, because a UST licensee in Mississippi illegally buried SBM shipped to that facility, USEPA successfully prosecuted the licensee for criminal violations of the Resource Conservation and Recovery Act (RCRA). Having no knowledge of the illegal conduct of the licensee, Mr. Williams fully supported and assisted USEPA and the United States Department of Justice in this criminal matter. On December 5, 2007, in recognition of both Mr. Williams' total unawareness of the illegal activity and his support of the prosecution of this case, the Office of the United States Attorney for the Southern District of Mississippi issued a Victim Letter to Mr. Williams under the Crime Victims' Rights Act. Because Mr. Williams insists on full disclosure in all regulatory proceedings, he directed me to enclose a copy of the Victim Letter for your files.

Obviously, the illegal conduct of the UST licensee in Mississippi redounded immeasurably to the detriment of Mr. Williams and UST, including the decision of the Navy to suspend contractual relations with the company. Now, the Navy wants to resume those contractual relations if the UST response to the RFP is selected.

IAP-Hill has advised Mr. Williams that one of the required elements of the UST response to the Navy RFP is a statement from Georgia EPD to the effect that use of the Sealtech architectural concrete masonry block, manufactured using the SBM from the Air Force at Warner Robins and other purchasers, will not constitute "disposal" of what would otherwise be classified as hazardous waste, by being "applied to the land," in contravention of RCRA regulations. Failure to meet this requirement will render the UST submission to the Navy unresponsive. Thus, we request a regulatory determination on this specific subject.

Unfortunately, because, as mentioned earlier in this request, Mr. Williams learned about this opportunity just days ago, he now faces an extremely short timeframe within which to work with you and your staff to reach closure on this request. IAP-Hill has told Mr. Williams that the UST submission must be received in hand no later than October 16, 2009. We greatly regret the time constraint we all face here, especially since your agency will be closed next Monday and Tuesday, but Mr. Williams must conform to the Navy process or lose this opportunity altogether. We now turn to what we believe are the legal precedents for you to consider in making your regulatory determination in this matter.

By letter dated December 15, 1992, Mr. Williams requested of Georgia EPD a regulatory determination regarding his SBM recycling process. By letter dated February 22, 1993, (copy enclosed) EPD advised Mr. Williams that his submission did not include sufficient information to make the determination he sought, and EPD detailed the additional information that was required to support a complete request. By letter dated February 25, 1994, (copy enclosed) EPD formally advised Mr. Williams that, based upon the additional information he provided as specified, his proposed use of SBM in the manufacture of bathroom fixtures would be exempt from Georgia's Rules for Hazardous Waste Management under 40 CFR 261.2(e)(1)(i). Of course, EPD also advised Mr. Williams that handling SBM in a manner inconsistent with the specific conditions for the exemption, as well as changes in the Georgia rules, would nullify the exemption itself. An EPD letter dated January 30, 1996, (copy enclosed) and addressed to Dave Bury at Robins AFB, reiterated the EPD February 25, 1994, determination. We apologize for the poor copy of the January 30, 1996, correspondence.

By letter dated March 31, 1997, Poly-Pacific International Inc. requested of USEPA, Region 4, a regulatory determination that the use of SBM (or plastic media blasting [PMB - as it was called]) in the manufacture of plastic agricultural fence posts was exempt from RCRA regulation 40 CFR 261.2(e)(1)(i). By letter dated April 9, 1997, (copy enclosed) USEPA, Region 4, issued its approval. In its regulatory determination, USEPA referenced an earlier letter, dated January 9, 1996, (copy enclosed) on the same subject.

In both the 1996 and 1997 letters from USEPA, Region 4, the only question that was addressed was whether or not the use of SBM in the manner presented qualified for the RCRA recycling exemption. Possible loss of the exemption, as was generally addressed in the February 24, 1994, letter to Mr. Williams mentioned above, was not addressed.

By letter dated February 15, 2001, Mr. Williams challenged the USEPA, Region 4 regulatory determination in the Poly-Pacific matter just mentioned. Specifically, Mr. Williams asserted that installation of the plastic fence posts constituted "disposal," because the product made with SBM was being "applied to the land," thus nullifying the RCRA exemption. By letter dated March 2, 2001, (copy enclosed) USEPA, Region 4, denied the claims asserted by Mr. Williams and reaffirmed its prior determination in the Poly-Pacific matter, stating that use of the plastic fence posts is "only incidental land placement."

We are not aware of any other regulatory determinations issued by USEPA, Region 4 on these particular RCRA issues since the March 2, 2001, letter to Mr. Williams mentioned above. However, we would call to your attention another matter which presented exactly the same issues we bring to you here. In point of fact, it is the unfortunate case mentioned above in which a UST licensee in Mississippi committed criminal offenses by mishandling SBM sent to that facility by UST. Before any SBM was shipped from UST to the Mississippi licensee, Mr. Williams requested of the Mississippi Department of Environmental Quality (MDEQ) a regulatory determination essentially the same as our request here. Mr. Williams had received, by letter dated April 14, 1992, a regulatory determination regarding the use of SBM. By letter dated June 18, 2001, (copy enclosed) MDEQ confirmed that the earlier regulatory determination was still in effect.

However, the June 18, 2001, letter to Mr. Williams did not specifically address placement of products manufactured with SBM "on the ground" (i.e. "applied to the land"). By letter dated December 20, 2001, (copy enclosed) addressed to the UST licensee in Mississippi, MDEQ clarified its determination by concurring in and adopting the rationale set forth in the April 9, 1997, and March 2, 2001, USEPA, Region 4 regulatory determinations in the Poly-Pacific matter. The obvious distinction between the USEPA, Region 4 and MDEQ regulatory determinations is that one dealt with fence posts and the other dealt with products placed on the ground. Both dealt with the "applied to the land" element in the RCRA exemption regulations.

Sealtech architectural masonry concrete blocks are intended to be used in construction in the same way conventional concrete blocks are used, which means being laid on a solid foundation—not on bare dirt. For your information, and as a means of demonstrating compliance with the RCRA "legitimate recycling" requirements, we enclose both brochures about Sealtech blocks and an article about the use of these products in reconstruction efforts in the aftermath of Hurricane Katrina.

We respectfully request that the Hazardous Waste Management Branch of the Georgia Environmental Protection Division issue to U. S. Technology Corporation a regulatory determination that concurs in and adopts prior USEPA, Region 4 regulatory determinations that recycled spent blasting media, used as an ingredient in the manufacture of beneficial products such as Sealtech architectural concrete masonry blocks, qualifies for applicable recycling exemptions under regulations promulgated under the Resource Conservation and Recovery Act.

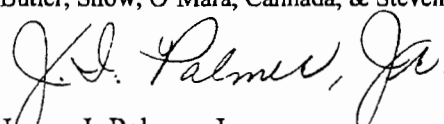
Mr. Mark Smith, Chief
Hazardous Waste Management Branch
Georgia Environmental Protection Division
October 7, 2009

Page 5 of 5

Further, we request that your regulatory determination specify that such exemptions continue to apply in the event such products are applied in a manner that might constitute incidental contact with the land.

We greatly appreciate your help in this matter, and again we apologize for the extremely tight timeframe we face. Please address your response to both Mr. DeHihns and me. Our respective addresses are provided below.

Respectfully submitted,
Butler, Snow, O'Mara, Cannada, & Stevens, LLC


James I. Palmer, Jr.

JIP:dhc

cc: Lee A. DeHihns, III

Enclosures

James I. Palmer, Jr.
Butler, Snow, O'Mara, Stephens, and Cannada, PLLC
Crescent Center
6075 Poplar Avenue, Fifth Floor
Memphis, TN 38119

Lee A. DeHihns, III
Alston and Bird
One Atlantic Center
1201 Peachtree Street
Atlanta, GA 30309-3424

Memphis 1415812v2



US007476273B2

(12) **United States Patent**
Williams

(10) **Patent No.:** **US 7,476,273 B2**
(45) **Date of Patent:** ***Jan. 13, 2009**

(54) **CEMENTITIOUS BLOCK MATERIAL
UTILIZING SPENT BLASTING ABRASIVE
PARTICLES**

4,673,437 A * 6/1987 Gelbman

OTHER PUBLICATIONS

- (75) **Inventor:** Raymond F. Williams, Massillon, OH (US)
- (73) **Assignee:** U.S. Technology Corporation, Canton, OH (US)
- (*) **Notice:** Subject to any disclaimer, the term of this patent is extended or adjusted under 35 U.S.C. 154(h) by 373 days.

Answer 70 of 165 Chem Abst on STN JP 20000053457 (Feb 22, 2000) Hoshino et al. abstract only.*
Answer 120 of 165 of Chem Abst on STN JP05085797 (Apr. 6, 1993) Nakane et al. abstract only.*
Answer 14 of 36 of Chem Abst on STN "Reuse of abrasive blast media from ship building industry into concrete", White et al., Hazardous and Industrial Wastes (1998), 30th, 257-266.*
Answer 20 of 36 of Chem Abst on STN "Recycling of spent abrasive media in non-structural concrete", Webster et al., Jnl of Environmental Engineering, (1996), 122(9), 840-849.*
Answer 29 of 36 of Chem Abst on STN JP05132143 (May 28, 1993), Yoshii et al. abstract only.*
Answer 38 of 36 of Chem Abst on STN JP 05139807 (Jun 8, 1993) Yoshii et al. abstract only.*

* cited by examiner

Primary Examiner—Paul Marcantoni(74) *Attorney, Agent, or Firm*—Sand & Scholt(21) **Appl. No.:** 11/166,429(22) **Filed:** Jun. 24, 2005(65) **Prior Publication Data**

US 2007/0012219 A1 Jan. 18, 2007

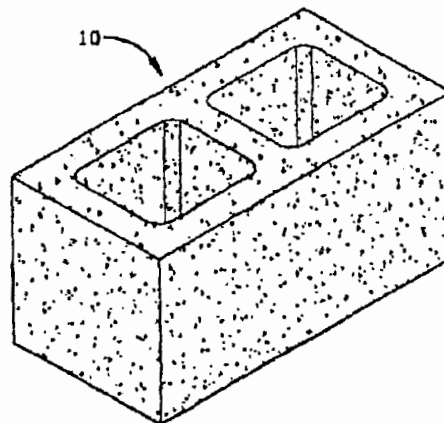
Related U.S. Application Data

(63) Continuation-in-part of application No. 10/825,733, filed on Apr. 15, 2004, now Pat. No. 7,438,757.

(51) **Int. Cl.**
C04B 18/04 (2006.01)(52) **U.S. Cl.** 106/713; 106/724; 106/823;
588/255; 588/257(58) **Field of Classification Search** 106/724,
106/713, 823; 588/255, 257
See application file for complete search history.(56) **References Cited****U.S. PATENT DOCUMENTS**4,058,406 A * 11/1977 Raponi
4,398,960 A * 8/1983 Murray 106/738(57) **ABSTRACT**

An accelerated-curing concrete masonry unit (CMU) mixture includes aggregate material, hydraulic cement and spent blasting abrasive particles, and may also include paint residue particles. The abrasive particles or abrasive and paint particles combined preferably make up at least 5.0% of the mixture by volume. Preferably, the hydraulic cement is Portland cement and the abrasive or combined particles make up about 10.0% to 17.0% of the mixture by volume. The abrasive particles typically have a fineness modulus ranging from 0.6 to 1.5 and more preferably from 0.75 to 1.2. Plastic particles may make up some or all of the abrasive particles. CMUs formed with this mixture are substantially more water repellent than standard CMUs and have a water absorption often no greater than 9.0 pounds per cubic foot. Preferred CMUs have an average net compressive strength of over 2,500 psi while levels of 3,000 psi or 3,500 psi are not uncommon.

40 Claims, 1 Drawing Sheet





US007438757B2

(12) **United States Patent**
Williams et al.

(10) Patent No.: **US 7,438,757 B2**

(45) Date of Patent: ***Oct. 21, 2008**

(54) **CONCRETE BLOCK AND METHOD OF MAKING SAME**

(75) Inventors: **Raymond F. Williams, Massillon, OH (US); Christopher C. McCoy, Massillon, OH (US)**

(73) Assignee: **U.S. Technology Corporation, Canton, OH (US)**

(*) Notice: Subject to any disclaimer, the term of this patent is extended or adjusted under 35 U.S.C. 154(b) by 683 days.

This patent is subject to a terminal disclaimer.

(21) Appl. No.: 10/825,733

(22) Filed: Apr. 15, 2004

(65) Prior Publication Data

US 2005/0247002 A1 Nov. 10, 2005

(51) Int. Cl.
C04B 16/00 (2006.01)
C04B 16/04 (2006.01)

(52) U.S. Cl. 106/724; 106/727; 106/823; 524/4

(58) Field of Classification Search 106/724, 106/727, 823; 524/4

See application file for complete search history.

(56) References Cited

U.S. PATENT DOCUMENTS

1,633,790 A * 6/1927 Lindstrom
4,019,919 A 4/1977 DeSalvo
4,058,406 A * 11/1977 Raponi 524/8
4,398,960 A * 8/1983 Murray
4,427,818 A 1/1984 Prusinski
2003/0084822 A1 * 5/2003 Barrow 106/724

OTHER PUBLICATIONS

Answer 20 of 36 Chem Abstr on STN \square "Recycling of spent abrasive media in non-structural concrete", Webster et al., Journal of Environ. Engineering (1996), 122(9), p. 840-849. \square *
* cited by examiner

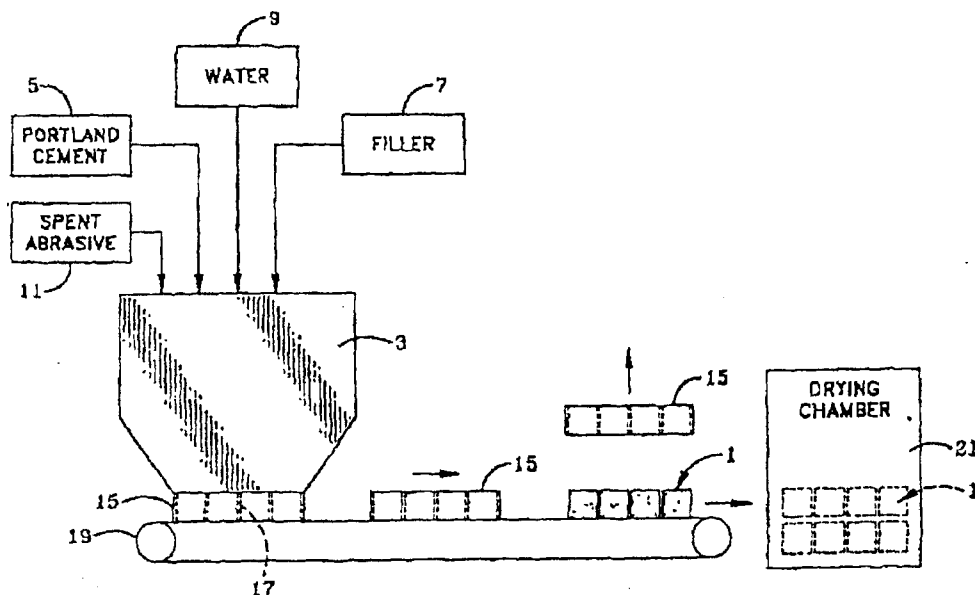
Primary Examiner—Paul Marcuconi

(74) Attorney, Agent, or Firm—Sand & Sebolt

(57) **ABSTRACT**

A concrete building block containing Portland cement, a filler, water, and a quantity of particularly sized plastic particles, such as spent abrasive particles of a thermoset plastic. The associated method of producing such blocks eliminates the need of curing the blocks in a heated humidity controlled environment in order for the blocks to attain the required water content for hydration of the cement.

11 Claims, 1 Drawing Sheet





U.S. Department of Justice
United States Attorney's Office
Southern District of Mississippi
188 East Capitol St.
Ste. 500
Jackson, MS 39201
Phone: 18666250327
Fax: (601) 973-2828

December 5, 2007

Ray Williams, President
United States Technology, Inc.
c/o Laura Batrus
150 Smokerise Drive
Wadsworth, OH 44281

Re: United States v. Dennie Eugene Pridemore
Case Number 2002R00623 and Court Docket Number: 5:06CR43DCBLRA

Dear Ray Williams:

Your name was forwarded to our office by law enforcement as a victim (or potential victim) in the above mentioned criminal case. We will continue to provide you with updated scheduling and event information as the case proceeds through the criminal justice system. The enclosed information provides instructions for accessing the Victim Notification System (VNS) Call Center and VNS web site.

Charges have been filed against defendant(s) Dennie Eugene Pridemore. The lead prosecutor for this case is Jeremy Korzenik. The main charge is categorized as Environmental Crime. The indictment has been downloaded on the website for your information.

The Crime Victims' Rights Act gives victims of criminal offenses in Federal court certain rights, including: (1) The right to be reasonably protected from the accused; (2) The right to reasonable, accurate, and timely notice of any public court proceeding, involving the crime, or of any release or escape of the accused; (3) The right not to be excluded from any such public court proceeding, unless the court, after receiving clear and convincing evidence, determines that testimony by the victim would be materially altered if the victim heard other testimony at that proceeding; (4) The right to be reasonably heard at any public proceeding in the district court involving release, plea, or sentencing; (5) The reasonable right to confer with the attorney for the Government in the case; (6) The right to full and timely restitution as provided in law; (7) The right to proceedings free from unreasonable delay; and (8) The right to be treated with fairness and with respect for the victim's dignity and privacy.

We will make our best efforts to ensure you are provided the rights described above. It is important to keep in mind that the defendant(s) are presumed innocent until proven guilty and that presumption requires both the Court and our office to take certain steps to ensure that justice is served. While our office cannot act as your attorney or provide you with legal advice, you can seek the advice of an attorney with respect to these rights or other related legal matters.

Defendant(s), Dennie Eugene Pridemore, has been released from federal custody. The defendant was released on a \$100,000 bond pending sentencing.

On November 15, 2007, defendant Dennie Eugene Pridemore, pled guilty to the charges listed below. Any remaining counts will be disposed of at the time of sentencing. As a result of the guilty plea, there will be no trial involving this defendant.

<u>Number of Charges</u>	<u>Charge</u>	<u>Disposition</u>
2	Fraud/false statements generally	Guilty
4	Hazardous waste management - Federal enforcement	Guilty

It is helpful for the Court to know the impact of this crime on its victims. In an effort to provide this information to the Court, we are enclosing a Victim Impact Statement. If you choose to complete a statement, please forward it to: United States Attorneys Office, Southern District of Mississippi, 188 East Capitol St., Ste. 500, Jackson, MS 39201.

This is one way the Court can hear your concerns as they relate to the crime. A United States Probation Officer may also contact you in an effort to obtain additional victim impact information. Victim impact information is generally not public information; however, under criminal law and procedures, all information contained in your questionnaire will be disclosed to the defendant and his attorney. PLEASE RETURN THE AFFIDAVIT AND AN IMPACT STATEMENT BY JANUARY 4, 2008.

The sentencing hearing for defendant(s), Dennie Eugene Pridemore, has been set for February 7, 2008, 10:30 AM at Natchez, MS before Judge David C. Bramlette. You are welcome to attend this proceeding; however, unless you have received a subpoena, your attendance is not required by the Court. If you plan on attending, please check with the VNS Call Center to verify the sentencing date and time. Should you wish to speak at the sentencing or want to check for the most current information on the date/time of this event please call our office a day or two before the scheduled hearing.

A United States Probation Officer prepares a report for the Court and may contact you to discuss the impact the crime had on you financially, physically, and/or emotionally. If you are contacted, please make every effort to provide accurate and detailed information.

The Victim Notification System (VNS) is designed to provide you with information regarding the case as it proceeds through the criminal justice system. You may obtain current information about this case on the VNS web site at WWW.Notify.USDOJ.GOV or from the VNS Call Center at 1-866-DOJ-4YOU (1-866-365-4968) (TDD/TTY: 1-866-228-4619) (International: 1-502-213-2767). In addition, you may use the Call Center or Internet to update your contact information and/or change your decision about participation in the notification program. If you update your contact information to include a current email address, VNS will send information to that email address. In order to continue to receive notifications, it is your responsibility to keep your contact information current.

You will use your Victim Identification Number (VIN) '1940871' and Personal Identification Number (PIN) '8054' anytime you contact the Call Center and the first time you log on to the VNS web site. In addition, the first time you access the VNS Internet site, you will be prompted to enter your last name (or business name) as currently contained in VNS. The name you should enter is United States Technology, Inc..

Remember, VNS is an automated system and cannot answer questions. If you have other questions which involve this matter, please contact this office at the number listed above.

Sincerely,

STAN HARRIS, Acting
United States Attorney

Paulette Womack

Paulette Womack
LECC/Victim Witness Coordinator

Georgia Department of Natural Resources

REPLY TO:

205 Butler Street, S.E., Floyd Towers East, Atlanta, Georgia 30334

HAZARDOUS WASTE MANAGEMENT BRANCH
GENERATOR COMPLIANCE PROGRAM
4244 INTERNATIONAL PARKWAY
SUITE 104
ATLANTA, GEORGIA 30354
(404)362-2684

Joe D. Tanner, Commissioner
Harold P. Reheis, Director
Environmental Protection Division

February 22, 1993

Mr. Raymond F. Williams
President
U S Technology Corporation
220 7th Street S.E.
Canton, Ohio 44702

SUBJECT: Plastic Abrasive Recycling Program

Dear Mr. Williams:

The Hazardous Waste Management Branch has reviewed your letter dated December 15, 1992, and supporting documentation detailing your plastic abrasive recycling program. You have requested regulatory interpretation on the plastic abrasive recycling program.

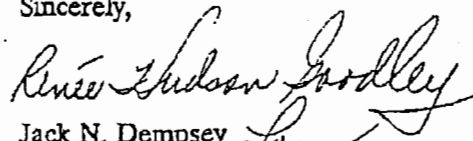
Based upon the information submitted, this office is unable to determine if the plastic abrasive recycling program meets the requirements set forth by the Georgia Rules for Hazardous Waste Management and the Code of Federal Regulations, Title 40, adopted by reference. Therefore, this office is requesting additional information on the product, abrasive process, and the known market before a regulatory interpretation can be made. The following information is necessary:

1. Detailed schematic drawing of the plastic abrasive application process and the recovery system;
2. Complete and detailed chemical analysis of the plastic abrasive used in the process;
3. Complete and detailed chemical analysis of the product without the contaminated media as a substitute ingredient. This information should also include all physical properties;
4. Written explanation of the beneficial factors the hazardous waste constituents contribute to the composition of the product; and
5. Documentation that demonstrates a known market or disposition of the product.

Mr. Raymond Williams
U S Technology Corporation
February 22, 1993
Page 2

Should any question arise, please contact Donald N. Montgomery at (404) 362-2684.

Sincerely,



Jack N. Dempsey *for*
Unit Coordinator
Generator Compliance Program

JND/DNM/klc

cc: Jennifer R. Kaduck
John D. Taylor, Jr.
Renée Hudson Goodley

File: Regulatory Interpretation

Georgia Department of Natural Resources

205 Butler Street, S.E., Suite 1066, Atlanta, Georgia 30334

Joe D. Tanner, Commissioner

Harold F. Rebeis, Director

Environmental Protection Division

404/657-8831 FAX: 404/657-7379

February 25, 1994

Mr. Raymond F. Williams
President
U S Technology Corporation
220 7th Street S.E.
Canton, Ohio 44702

SUBJECT: Plastic Abrasive Recycling Program

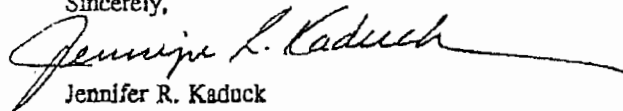
Dear Mr. Williams:

The Hazardous Waste Management Branch has reviewed your letter of November 10, 1993 and supporting documentation detailing your recycling program for spent plastic abrasive material generated from aircraft paint removal operations.

Provided your program is as described in the supporting documents, we have concluded the spent plastic abrasive material appears to be a legitimate and effective substitute for calcium carbonate in the manufacture of bathroom fixtures. Therefore, it is exempt from Georgia's Rules for Hazardous Waste Management under 40 CFR 261.2(c)(1)(i).

Please be advised that if the spent plastic media is handled in a manner inconsistent with the exemption or a change in the Rules eliminates the exemption, the spent plastic abrasive material would be subject to Georgia's Rules for Hazardous Waste Management. If you have any further questions, please contact Renée Hudson Goodley at (404) 657-8831.

Sincerely,



Jennifer R. Kaduck

Chief

Hazardous Waste Management Branch

JRKDNMklw

c: John D. Taylor, Jr.
Renée Hudson Goodley
Jim Ussery
Bill Mundy

File: Regulatory Interpretation

R:\DONM\USTECH\4.LTR

US TECHNOLOGY
Georgia Department of Natural Resources

205 Butler Street, S.E., Suite 1162, Atlanta, Georgia 30334

Lorica C. Barrett, Commissioner
Environmental Protection Division

Herold P. Renels, Director
404/558-2833

January 30, 1996

**CERTIFIED MAIL
RETURN RECEIPT REQUESTED**

Dave Bury
WR-ALC/EMR
216 Ocmulgee Court
Robins AFB, Georgia 31050-1040

RE: Recycling Spent Blast Media

Dear Mr Bury:

The Georgia Environmental Protection Division (EPD) has reviewed your October 30, 1995 letter regarding the spent plastic blast media (PBM) containing chromium and cadmium generated from aircraft paint removal operations. Based on the documentation provided by US Technology Corporation, Georgia EPD concurs that the spent PBM meets the requirements under 40 CFR 261.2(f) as an effective substitute for calcium carbonate in the manufacture of bathroom fixtures.

Please be advised that if the spent PBM is handled in a manner inconsistent with the exemption or a change in the Rules eliminates the exemption, the spent PBM would be subject to Georgia's Rules for Hazardous Waste Management. If you have any questions regarding this matter, please contact Danny Heater at 404-656-2833.

Sincerely,


Jim Ussery
Program Manager
Hazardous Waste Management Branch

File: RAFB(R)
m:\del\hwa\hwa\pbc\exp12.95



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

REGION 4
ATLANTA FEDERAL CENTER
100 ALABAMA STREET, S.W.
ATLANTA, GEORGIA 30303-3104

APR 09 1997

4WD-RCRA

CERTIFIED MAIL
RETURN RECEIPT REQUESTED

Mr. Ray Pollard
Plant Manager
Poly-Pacific International Inc.
8918-18 Street
Edmonton, AB, Canada, T6P 1K6

SUBJ: Poly-Pacific International Inc. - Multicut® Plastic Media
Blasting (PMB) Recycling Program

Dear Mr. Pollard:

The purpose of this letter is to respond to your request concerning the subject referenced above. In a letter, dated March 31, 1997, you requested confirmation by the United States Environmental Protection Agency (EPA), Region 4, that spent Multicut® plastic media blasting (PMB) materials as used in the recycling program of Poly-Pacific International Inc. are exempt from regulation as solid and hazardous wastes under the Resource Conservation and Recovery Act (RCRA). As you stated in your letter, the Multicut® PMB materials (acrylic polymers and urea (Amino Thermoset) polymers) become spent after being used to remove paint and coatings from aircraft and aircraft components, thereby avoiding the solvents which were formerly used for this task. You also stated your position that the spent Multicut® PMB materials qualify for the exclusion in 40 CFR § 261.2(e)(1)(i) when used in the recycling program of Poly-Pacific International Inc. Those secondary materials that are recycled by being used or reused as ingredients in an industrial process to make a product, provided the materials are not being reclaimed, are excluded from classification as solid wastes by § 261.2(e)(1)(i). The exclusion does not apply if the secondary material is managed in one or more of the following ways in order to recycle it: (1) burning for energy recovery, (2) use to produce a fuel, (3) use as an ingredient in fuels, (4) use in a manner constituting disposal, (5) use to produce a product that is applied to the land, or (6) speculative accumulation. (Please see 40 CFR § 261.2(e)(2).)

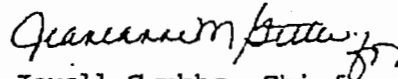
EPA, Region 4, has reviewed the information, submitted with your letter, on chemical analysis of the Multicut® PMB materials before use, Material Safety Data Sheets, and the agreement between Poly-Pacific International Inc. and Plastic Plastic Inc., Ontario, Canada, to use the spent Multicut® PMB materials to

manufacture agricultural plastic fence posts. EPA, Region 4, also reviewed a letter from its files, dated January 9, 1996, which responded to a similar request about a similar spent material. This letter, which you transmitted by facsimile to Shannon Maher, of my staff, indicated that paint chips in the spent material served as pigments and to provide opacity in the final product. During a telephone conversation with Judy Sophianopoulos, of my staff, on April 3, 1997, you stated that the paint chips in your spent PMB materials serve a similar function. Copies of these documents are enclosed. Based on the documents reviewed and the telephone conversations on March 20 and April 4, 1997, EPA, Region 4, confirms that spent Multicut® plastic media blasting (PMB) materials as used in the recycling program of Poly-Pacific International Inc. do qualify for the exemption from RCRA regulation provided in 40 CFR Section 261.2(e)(1)(i).

Please be advised that State requirements for these materials may be more stringent than those of EPA. Therefore, each State environmental office should be consulted before managing these secondary materials in that State. Enclosed is a list of names, addresses, and phone numbers for State environmental offices in Region 4.

Please contact Judy Sophianopoulos at (404) 562-8604, if you have questions or would like additional information concerning EPA's determination in this matter.

Sincerely yours,



Jewell Grubbs, Chief
Enforcement and
Compliance Branch
Waste Management Division

Enclosures (5)

cc: John A. Poole, Alabama Department of Environmental
Management
Satish Kastury, Florida Department of Environmental
Protection
Jennifer R. Kaduck, Georgia Environmental Protection
Division
Robert H. Daniell, Kentucky Department for Environmental
Protection
Jerry Banks, Mississippi Department of Environmental Quality
William L. Meyer, North Carolina Department of Environment,
Health, and Natural Resources
Hartsill Truesdale, South Carolina Department of Health and
Environmental Control
Tom Tiesler, Tennessee Department of Environment and



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

REGION 4
ATLANTA FEDERAL CENTER
100 ALABAMA STREET, S.W.
ATLANTA, GEORGIA 30303-3104

APR 09 1997

4WD-RCRA

CERTIFIED MAIL
RETURN RECEIPT REQUESTED

Mr. Ray Pollard
Plant Manager
Poly-Pacific International Inc.
8918-18 Street
Edmonton, AB, Canada, T6P 1K6

SUBJ: Poly-Pacific International Inc. - Multicut® Plastic Media
Blasting (PMB) Recycling Program

Dear Mr. Pollard:

The purpose of this letter is to respond to your request concerning the subject referenced above. In a letter, dated March 31, 1997, you requested confirmation by the United States Environmental Protection Agency (EPA), Region 4, that spent Multicut® plastic media blasting (PMB) materials as used in the recycling program of Poly-Pacific International Inc. are exempt from regulation as solid and hazardous wastes under the Resource Conservation and Recovery Act (RCRA). As you stated in your letter, the Multicut® PMB materials (acrylic polymers and urea (Amino Thermoset) polymers) become spent after being used to remove paint and coatings from aircraft and aircraft components, thereby avoiding the solvents which were formerly used for this task. You also stated your position that the spent Multicut® PMB materials qualify for the exclusion in 40 CFR § 261.2(e)(1)(i) when used in the recycling program of Poly-Pacific International Inc. Those secondary materials that are recycled by being used or reused as ingredients in an industrial process to make a product, provided the materials are not being reclaimed, are excluded from classification as solid wastes by § 261.2(e)(1)(i). The exclusion does not apply if the secondary material is managed in one or more of the following ways in order to recycle it: (1) burning for energy recovery, (2) use to produce a fuel, (3) use as an ingredient in fuels, (4) use in a manner constituting disposal, (5) use to produce a product that is applied to the land, or (6) speculative accumulation. (Please see 40 CFR § 261.2(e)(2).)

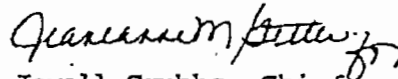
EPA, Region 4, has reviewed the information, submitted with your letter, on chemical analysis of the Multicut® PMB materials before use, Material Safety Data Sheets, and the agreement between Poly-Pacific International Inc. and Plastic Plastic Inc., Ontario, Canada, to use the spent Multicut® PMB materials to

manufacture agricultural plastic fence posts. EPA, Region 4, also reviewed a letter from its files, dated January 9, 1996, which responded to a similar request about a similar spent material. This letter, which you transmitted by facsimile to Shannon Maher, of my staff, indicated that paint chips in the spent material served as pigments and to provide opacity in the final product. During a telephone conversation with Judy Sophianopoulos, of my staff, on April 3, 1997, you stated that the paint chips in your spent PMB materials serve a similar function. Copies of these documents are enclosed. Based on the documents reviewed and the telephone conversations on March 20 and April 4, 1997, EPA, Region 4, confirms that spent Multicut® plastic media blasting (PMB) materials as used in the recycling program of Poly-Pacific International Inc. do qualify for the exemption from RCRA regulation provided in 40 CFR Section 261.2(e)(1)(i).

Please be advised that State requirements for these materials may be more stringent than those of EPA. Therefore, each State environmental office should be consulted before managing these secondary materials in that State. Enclosed is a list of names, addresses, and phone numbers for State environmental offices in Region 4.

Please contact Judy Sophianopoulos at (404) 562-8604, if you have questions or would like additional information concerning EPA's determination in this matter.

Sincerely yours,



Jewell Grubbs, Chief
Enforcement and
Compliance Branch
Waste Management Division

Enclosures (5)

cc: John A. Poole, Alabama Department of Environmental
Management
Satish Kastury, Florida Department of Environmental
Protection
Jennifer R. Kaduck, Georgia Environmental Protection
Division
Robert H. Daniell, Kentucky Department for Environmental
Protection
Jerry Banks, Mississippi Department of Environmental Quality
William L. Meyer, North Carolina Department of Environment,
Health, and Natural Resources
Hartsill Truesdale, South Carolina Department of Health and
Environmental Control
Tom Tiesler, Tennessee Department of Environment and



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

REGION 4

345 COURTLAND STREET, N.E.
ATLANTA, GEORGIA 30365

JAN 09 1996

4WD-RCRA

CERTIFIED MAIL
RETURN RECEIPT REQUESTED

Mr. G. Alan Perkins
Williams & Anderson
Twenty-Second Floor
111 Center Street
Little Rock, Arkansas 72201

SUBJ: Composite Leasing Corporation (Composite) Plastic Media
Blasting (PMB) Recycling Program

Dear Mr. Perkins:

The purpose of this letter is to respond to your letter on behalf of Composite, dated October 5, 1995, requesting confirmation of the regulatory exemption of recycled acrylic plastic dust resulting from the PMB of paints and coatings from aircraft and aircraft components. It is claimed, in your letter, that the PMB dust is used as an ingredient in an industrial process to make a product, without reclamation. As such, it should not be considered a solid waste. And, therefore, it is not subject to RCRA regulations.

EPA reviewed the information provided and concluded that the presence of metals (chromium and cadmium), in the PMB dust, warranted further examination. It is stated in your letter that: *PMB dust product which consists of 96 to 99 percent acrylic plastic, sometimes exhibits the toxicity characteristic for chromium and/or cadmium due to the inclusion of minute paint chips.* EPA, by telephone, communicated its concern regarding this matter. Specifically, EPA requested additional supporting documentation and an explanation on the benefits provided by the paint chip impurities to the finished recycled product.

In your reply letter to EPA's request, dated November 29, 1995, you stated that the chromium and cadmium are contained in the pigments in the paint chips. These chips give the dust product a uniformly grayish color and opaque condition. Both these characteristics are important to the appearance of the recycled finished product. In order to achieve the color and opaqueness desired, without the benefit of PMB dust, the recycler must add pigments or pigmented material. The pigments added contain levels of chromium, cadmium, and/or other heavy metals, in similar or greater amounts than the PMB dust already contains.

After reviewing your letters and supporting documentation, EPA has determined that the PMB recycling process meets the requirements set forth in 40 CFR § 261.2(e)(1)(i). Therefore, within the management practices described in your documentation, the PMB dust is not considered a solid waste and is not subject to RCRA Regulations.

If you have any questions, please contact Mr. Carlos E. Merizalde, of my staff, at (404) 347-7603, ext. 6401.

Sincerely,

A handwritten signature in cursive script, appearing to read "Alan Farmer".

G. Alan Farmer
Chief, RCRA Branch
Waste Management Division

cc: Mr. Jerry B. Banks, MDEQ Director Hazardous Waste Division

US TECHNOLOGY
Georgia Department of Natural Resources

205 Butler Street, S.E., Suite 1162, Atlanta, Georgia 30334

Lorica C. Barrett, Commissioner
Environmental Protection Division

Harold F. Renels, Director
404/656-2833

January 30, 1996

CERTIFIED MAIL
RETURN RECEIPT REQUESTED

Dave Bury
WR-ALC/EMR
216 Ocmulgee Court
Robins AFB, Georgia 31098-1040

RE: Recycling Spent Blast Media

Dear Mr Bury:

The Georgia Environmental Protection Division (EPD) has reviewed your October 30, 1995 letter regarding the spent plastic blast media (PBM) containing chromium and cadmium generated from aircraft paint removal operations. Based on the documentation provided by US Technology Corporation, Georgia EPD concurs that the spent PBM meets the requirements under 40 CFR 261.2(f) as an effective substitute for calcium carbonate in the manufacture of bathroom fixtures.

Please be advised that if the spent PBM is handled in a manner inconsistent with the exemption or a change in the Rules eliminates the exemption, the spent PBM would be subject to Georgia's Rules for Hazardous Waste Management. If you have any questions regarding this matter, please contact Danny Heater at 404-656-2833.

Sincerely,


Jim Essary
Program Manager
Hazardous Waste Management Branch

File: RAAB(R)
and send to the appropriate person 12.96



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

REGION 4
ATLANTA FEDERAL CENTER
61 FORSYTH STREET
ATLANTA, GEORGIA 30303-8960

MAR 02 2001

4WD-RCRA

CERTIFIED MAIL
RETURN RECEIPT REQUESTED

Mr. Raymond F. Williams
President
US Technology Corporation
220 Seventh Street, S.E.
Canton, Ohio 44702

SUBJ: Poly-Pacific International Inc. Recycling Program

Dear Mr. Williams:

The purpose of this letter is to provide you with an interim response to your letter of February 15, 2001, in which you make three requests of the United States Environmental Protection Agency (EPA), Region 4. EPA understands and appreciates your concerns and desire to prevent harm to human health and the environment from the recycling of hazardous materials. Specifically, you have expressed concerns and shared information about the recycling program of Poly-Pacific International Inc., of Canada (PPII).

EPA has reviewed information received from you and others, and is awaiting final results of independent analyses, in order to determine whether the opinion stated in the letter, dated April 9, 1997, is correct. As you know, states have the authority to establish more stringent requirements than those of EPA, and the April 9, 1997 letter makes it clear that PPII should contact the environmental office in each state prior to marketing the product of the recycling program in that state. All of the States in Region 4 are authorized to implement the recycling regulations in 40 C.F.R. Parts 260 and 261, including decisions on what is excluded from the definition of solid waste.

Your first request was "that Region 4 E.P.A. immediately notify Poly Pacific International Inc. that the April 4, 1997 letter cannot be used as an approval by Region 4 because it was not based on a full description of the process."

EPA has notified PPII that its process is being studied, because various people had expressed concerns and asked EPA to take another look at the recycling program. EPA must have final results, independently obtained, before making a final decision on whether to change its position on the PPII recycling program. Also, as stated above, EPA's position is not binding on the states.

Internet Address (URL) • <http://www.epa.gov>

Recycled/Recyclable • Printed with Vegetable Oil Based Inks on Recycled Paper (Minimum 30% Postconsumer)

Your second request was "that Region 4 E.P.A. determine that heavy metals and/or pesticides incorporated into fence posts are toxics along for the ride."

EPA, Region 4 agreed with the requesting companies, in April 1996 and April 1997, that the paint chips, containing heavy metals, in spent plastic blasting media performed the useful function of providing pigmentation in the final product. Final results of an independent study of the pesticide issue should be available this month.

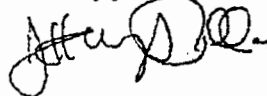
Your third request was "that Region 4 E.P.A. determine that fence post made to be permanently embedded below ground is 'application against the land in a manner constituting disposal' consistent with the determinations of Region 8 and 9."

EPA, Region 4, continues to believe that use of fence posts made from secondary materials is not use constituting disposal, because, unlike fertilizers and road-bed materials, there is only incidental land placement. It is not uncommon to have differing interpretations of RCRA regulations, and in this instance, the Regions and states appear to be split about equally in classifying this recycling process as use constituting disposal. Region 4 respects the different opinions, and that is one reason for obtaining independent study results.

To summarize, EPA, Region 4 appreciates your concerns. Everything necessary to protect human health and the environment is being done and will continue to be done.

Please contact Judy Sophianopoulos at (404) 562-8604, if you have questions or would like additional information.

Sincerely yours,



Jeffrey T. Pallas, Chief
South RCRA Enforcement and Compliance
Section
RCRA Enforcement and Compliance Branch



STATE OF MISSISSIPPI
DAVID RONALD MUSGROVE, GOVERNOR
MISSISSIPPI DEPARTMENT OF ENVIRONMENTAL QUALITY
CHARLES H. CHISOLM, EXECUTIVE DIRECTOR

June 18, 2001

Raymond F. Williams, President
US Technology Corporation
220 Seventh Street, S.E.
Canton, Ohio 44702

Dear Mr. Williams:

Re: Request for regulatory determination

This is a response to your request for regulatory applicability determination on the use of spent plastic abrasives for the manufacture of various products. A letter of approval had previously been sent to you on April 14, 1992.

According to the information submitted, the source of the spent abrasives is mainly from commercial and the U.S. military's operations of pressure blasting aircraft for paint removal. The abrasives contain plastic and other blast media, such as glass, aluminum oxide, garnet, Starblast and copper or iron slag, as well as paint residue, which may contain chromium, lead, and cadmium. This material is used as filler and/or colorant in the finished products. The products are manufactured using a polymer matrix, the spent abrasives, and other virgin products as needed. There is reportedly no reclamation of the spent abrasives prior to their being introduced to the manufacturing process.

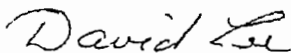
It appears that the same hazardous waste regulatory exemption applies today as in 1992, namely the exemption in Mississippi Hazardous Waste Regulations (MHWMR) 261.2 (e)(1). This exemption is applicable as long as the material is not reclaimed prior to being used in the process. Simple screening to segregate the material based on particle size or remove foreign materials is not considered reclamation. Provided the criteria of this exemption are met, the spent abrasives are not considered solid waste, and therefore are not hazardous waste.

1 of 2

Any use of the spent abrasives must adhere to the requirements of speculative accumulation, as stated in MHWMR 261.1(c)(8) and 261.2(c)(4). Any company using the abrasives in Mississippi must keep documentation to demonstrate that the materials are not being accumulated speculatively (i.e.-during a calendar year, using at least 75% by weight or volume of the material accumulated at the beginning of the calendar year). Additionally, since the spent abrasives contain hazardous constituents, they may not be stored in the open where they could be subject to being contained in stormwater runoff. Storage should be in drums, tanks, bins, silos, enclosed buildings, or equivalent enclosures.

I hope this response answers your questions about the applicability of the MHWMR to this material. If you have further questions, feel free to contact me.

Sincerely



David E. Lee, P.E., Chief
Timber Branch, Compliance Division

cc: Jimmy Palmer; Butler, Snow, O'Mara, Stevens, & Cannada, PLLC



STATE OF MISSISSIPPI
DAVID RONALD MUSGROVE, GOVERNOR
MISSISSIPPI DEPARTMENT OF ENVIRONMENTAL QUALITY
CHARLES H. CHISOLM, EXECUTIVE DIRECTOR

December 20, 2001

Gene Pridemore
Hydromex, Inc.
P. O. Box 1514
Yazoo City, MS 39194

Dear Mr. Pridemore:

Re: Regulatory status of Hydromex products

This is a response to your inquiry concerning the regulatory status of Hydromex products that are placed on the ground for their intended use. In my letter to Ray Williams, dated June 18, 2001, I explained the exemption from the hazardous waste regulations for materials that are used in an industrial process to make a product. This letter did not address the issue of placing the manufactured products on the ground.

Recently there have been varying interpretations of whether products made from spent materials may be placed on the land. The applicable section of the Mississippi Hazardous Waste Management Regulations is 261.2(e)(2)(i). This text states that materials that are applied to the land may be solid waste (and therefore possibly hazardous waste); even if the use or reuse involves recycling. The term 'applied to the land' has had varying interpretations by EPA and the states. Some sources have interpreted this section of the regulations to mean that any produced material that contacts the ground in any manner falls under the scope of the rules. EPA Region IV takes the position that placement on the ground of certain manufactured products containing spent materials that may be hazardous is 'incidental' contact with the ground and not covered under the section referenced above. This interpretation appears to apply to products that have entrained the hazardous constituents in a matrix that is unlikely to leach into the surrounding soils in significant concentrations. This would be the case with the Hydromex products, since solidification with cement has long been recognized as an effective method of trapping constituents such as metals and greatly reducing their motility. This agency recognizes the Region IV interpretation of 'incidental' placement of such products, provided the finished products do not present a hazard to human health or the environment, as determined on a case-by-case basis. This determination would typically prohibit the use of spent materials containing highly toxic constituents that could be transferred to users of the product through skin absorption or inhalation. This agency would also be unlikely to approve uses of spent hazardous materials to make a product that is intended to be abraded into small particle size as it is used, which could expose users or the environment to the included hazardous constituents.

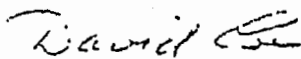
You stated that the spent materials you accept are normally non-hazardous per the TCLP test. If this is the case, the regulatory applicability issue is moot. The Mississippi Solid Waste Management Regulations do not address placement of manufactured products on the ground for their intended use. If you did accept some abrasives that failed the TCLP test and would be considered hazardous waste if disposed, the exemption in 261.2(e)(1)(i) would still be applicable, provided no changes were made to the material prior to use that could be considered reclamation under the regulations.

In summary, the Hydromex products, such as the levee mats, culverts, and other products that would be placed on or in the ground, are exempt from regulatory requirements of this agency, provided that:

- The spent abrasives used are non-hazardous, or
- The spent abrasives, if hazardous per the TCLP test, are used to make the finished products without first being reclaimed (excluding highly toxic and/or mobile constituents, as discussed in the second paragraph of this letter).

If you have further questions on this issue, feel free to contact me at 601.961.5377.

Sincerely



David E. Lee, P.E., Chief
Timber Branch, Compliance Division



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 4
ATLANTA FEDERAL CENTER
61 FORSYTH STREET
ATLANTA, GEORGIA 30303-8960

APR 14 2000

4WD-RCRA

CERTIFIED MAIL
RETURN RECEIPT REQUESTED

Mr. Ray Pollard
Plant Manager
Poly-Pacific International Inc.
8918-18 Street
Edmonton, AB, Canada, T6P 1K6

SUBJ: Poly-Pacific International Inc. - Multicut™ Plastic Media
Blasting (PMB) Recycling Program

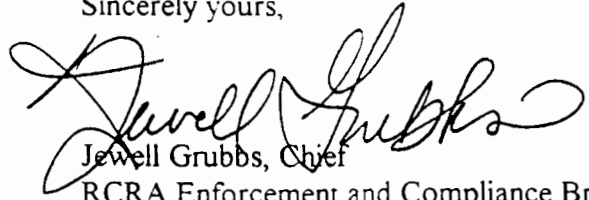
Dear Mr. Pollard:

The purpose of this letter is to inform you that the United States Environmental Protection Agency (EPA), Region 4, has been contacted by other Regions and States, to express their concerns about the letter, on the subject referenced above, to Ray Pollard from Jewell Grubbs, dated April 9, 1997, ("the 1997 letter"), and that EPA, Region 4, has begun an investigation of the environmental and health effects of using waste-derived plastic to manufacture plastic fence posts. Region 4 will inform you and the public of the results of this investigation when it has been completed.

Region 4 repeats here the statement in the 1997 letter that each State environmental office should be consulted before managing secondary materials in that State. Enclosed is a list of names, addresses, and phone numbers for State environmental offices in Region 4. All of the States in Region 4 are authorized to implement the recycling regulations in 40 C.F.R. Parts 260 and 261, including decisions on what is excluded from the definition of solid waste.

Please contact Judy Sophianopoulos at (404) 562-8604, if you have questions or would like additional information.

Sincerely yours,

A handwritten signature in black ink, appearing to read "Jewell Grubbs", is written over the typed name and title.

Jewell Grubbs, Chief
RCRA Enforcement and Compliance Branch
Waste Management Division

Enclosures (2)

1. Addresses of Region 4 State Environmental Offices
2. Copy of Letter to Ray Pollard from Jewell Grubbs, dated April 9, 1997

cc: Gerald Hardy, Alabama Department of Environmental
Management (ADEM)
Steven Cobb, ADEM
Satish Kastury, Florida Department of Environmental
Protection
Jennifer R. Kaduck, Georgia Environmental Protection
Division
Robert H. Daniell, Kentucky Department for Environmental
Protection
Don Watts, Mississippi Department of Environmental Quality
William L. Meyer, North Carolina Department of Environment,
Health, and Natural Resources
Hartsill Truesdale, South Carolina Department of Health and
Environmental Control
Mike Apple, Tennessee Department of Environment and Conservation
Richard E. Vaille, USEPA, Region 9, HAW/R1010, 75 Hawthorne
Street/W-T-3, San Francisco, CA 94105

STATE ENVIRONMENTAL OFFICES IN REGION 4

Steven Cobb, Chief
Hazardous Waste Management Branch
Gerald Hardy, Chief
Hazardous Waste Branch
Land Division
Alabama Department of Environmental
Management
P.O. Box 301463
Montgomery, AL 36130-1463
334-271-7730 FAX: 334-279-3050

Satish Kastury, Environmental Administrator
Florida Department of Environmental
Protection
Twin Towers Office Building
2600 Blair Stone Road
Tallahassee, FL 32399-2400
850-488-0300 FAX: 850-921-8018

Jennifer R. Kaduck, Chief
Hazardous Waste Management Branch
Environmental Protection Division
Georgia Department of Natural
Resources
Floyd Towers East, Room 1154
205 Butler Street, SE
Atlanta, GA 30334
404-656-4713 (Director's Office)
404-656-7802 (J. Kaduck's Office)
FAX: 404-651-9425

Robert H. Daniell, Director
Division of Waste Management
Kentucky Department for Environmental
Protection
Frankfort Office Park
14 Reilly Road
Frankfort, KY 40601
502-564-6716 FAX: 502-564-4049

Don Watts, Chief
Environmental Compliance
and Enforcement Division
Mississippi Department
of Environmental Quality
P.O. Box 10385
Jackson, MS 39289-0385
601-961-5221
FAX: 601-961-5741
e-mail: Don_Watts@deq.state.ms

William L. Meyer, Director
Solid Waste Management Division
North Carolina Department of
Environment, Health and
Natural Resources
P.O. Box 27687
Raleigh, NC 27611-7687
919-733-2178 FAX: 919-715-3605
(Street Address): 401 Oberlin Road
Suite 150
Raleigh, NC 27605

Hartsill Truesdale, Chief
Bureau of Land and Waste
Management
South Carolina Department of
Health and Environmental
Control
2600 Bull Street
Columbia, SC 29201
803-896-4000 FAX: 803-896-4002

Mike Apple, Director
Division of Solid Waste
Management
Tennessee Department of
Environment and Conservation
5th Floor, L & C Tower
401 Church Street
Nashville, TN 37243-1535
615-532-0780
615-532-0829 (Director's Secretary)
FAX: 615-532-0886



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 4
ATLANTA FEDERAL CENTER
100 ALABAMA STREET, S.W.
ATLANTA, GEORGIA 30303-3104

APR 09 1997

4WD-RCRA

CERTIFIED MAIL
RETURN RECEIPT REQUESTED

Mr. Ray Pollard
Plant Manager
Poly-Pacific International Inc.
8918-18 Street
Edmonton, AB, Canada, T6P 1K6

SUBJ: Poly-Pacific International Inc. - Multicut® Plastic Media
Blasting (PMB) Recycling Program

Dear Mr. Pollard:

The purpose of this letter is to respond to your request concerning the subject referenced above. In a letter, dated March 31, 1997, you requested confirmation by the United States Environmental Protection Agency (EPA), Region 4, that spent Multicut® plastic media blasting (PMB) materials as used in the recycling program of Poly-Pacific International Inc. are exempt from regulation as solid and hazardous wastes under the Resource Conservation and Recovery Act (RCRA). As you stated in your letter, the Multicut® PMB materials (acrylic polymers and urea (Amino Thermoset) polymers) become spent after being used to remove paint and coatings from aircraft and aircraft components, thereby avoiding the solvents which were formerly used for this task. You also stated your position that the spent Multicut® PMB materials qualify for the exclusion in 40 CFR § 261.2(e)(1)(i) when used in the recycling program of Poly-Pacific International Inc. Those secondary materials that are recycled by being used or reused as ingredients in an industrial process to make a product, provided the materials are not being reclaimed, are excluded from classification as solid wastes by § 261.2(e)(1)(i). The exclusion does not apply if the secondary material is managed in one or more of the following ways in order to recycle it: (1) burning for energy recovery, (2) use to produce a fuel, (3) use as an ingredient in fuels, (4) use in a manner constituting disposal, (5) use to produce a product that is applied to the land, or (6) speculative accumulation. (Please see 40 CFR § 261.2(e)(2).)

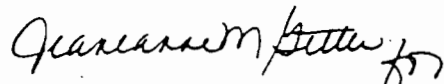
EPA, Region 4, has reviewed the information, submitted with your letter, on chemical analysis of the Multicut® PMB materials before use, Material Safety Data Sheets, and the agreement between Poly-Pacific International Inc. and Plastic Plastic Inc., Ontario, Canada, to use the spent Multicut® PMB materials to

manufacture agricultural plastic fence posts. EPA, Region 4, also reviewed a letter from its files, dated January 9, 1996, which responded to a similar request about a similar spent material. This letter, which you transmitted by facsimile to Shannon Maher, of my staff, indicated that paint chips in the spent material served as pigments and to provide opacity in the final product. During a telephone conversation with Judy Sophianopoulos, of my staff, on April 3, 1997, you stated that the paint chips in your spent PMB materials serve a similar function. Copies of these documents are enclosed. Based on the documents reviewed and the telephone conversations on March 20 and April 4, 1997, EPA, Region 4, confirms that spent Multicut® plastic media blasting (PMB) materials as used in the recycling program of Poly-Pacific International Inc. do qualify for the exemption from RCRA regulation provided in 40 CFR Section 261.2(e)(1)(i).

Please be advised that State requirements for these materials may be more stringent than those of EPA. Therefore, each State environmental office should be consulted before managing these secondary materials in that State. Enclosed is a list of names, addresses, and phone numbers for State environmental offices in Region 4.

Please contact Judy Sophianopoulos at (404) 562-8604, if you have questions or would like additional information concerning EPA's determination in this matter.

Sincerely yours,



Jewell Grubbs, Chief
Enforcement and
Compliance Branch
Waste Management Division

Enclosures (5)

cc: John A. Poole, Alabama Department of Environmental
Management
Satish Kastury, Florida Department of Environmental
Protection
Jennifer R. Kaduck, Georgia Environmental Protection
Division
Robert H. Daniell, Kentucky Department for Environmental
Protection
Jerry Banks, Mississippi Department of Environmental Quality
William L. Meyer, North Carolina Department of Environment,
Health, and Natural Resources
Hartsill Truesdale, South Carolina Department of Health and
Environmental Control
Tom Tiesler, Tennessee Department of Environment and

Conservation
Richard E. Vaille, USEPA, Region 9, HAW/R1010, 75 Hawthorne
Street/W-T-3, San Francisco, CA 94105



File _____

March 31, 1997

**VIA FAX: (404) 562-8439
(ORIGINAL BY COURIER)**

Ms. Jewell Grubbs
Chief Enforcement Compliance Branch
Waste Management Division
EPA Region 4
Atlanta Federal Centre
61 Forsyth Street
Atlanta, Georgia 30303

Dear Ms. Grubbs:

**RE: POLY-PACIFIC INTERNATIONAL INC. - MULTICUT™ PLASTIC MEDIA
BLASTING (PMB) RECYCLING PROGRAM**

Further to our telephone conversation on March 20, 1997, this is to advise that we request your confirmation of the regulatory exemption (40 CFR § 261.2 (e) (1) (i)) of recycled urea thermoset and acrylic plastic dust resulting from the PMB of paint and coatings from aircraft and aircraft components.

Poly-Pacific International Inc. (PPII) is an Edmonton, Alberta, Canada based public company engaged in the manufacture and distribution of plastic media under its trade mark MultiCut™. Plastic media is specifically designed for the paint removal from aircraft and aircraft components without the use of chemical. PPII manufactures plastic media from 100% scrap urea thermoset plastic (e.g. light switch plates) and acrylic thermoplastic (e.g. sheet). We are currently selling MultiCut™ worldwide including the United States. Copies of our Material Safety Data Sheets are enclosed for your information.

Plastic Plastic Inc. of St. Thomas, Ontario, Canada is a Canadian company engaged in the manufacture and distribution of agricultural plastic fence posts. In July, 1996, Poly-Pacific International Inc. and Plastic Plastic Inc. entered into an agreement whereby Poly-Pacific International Inc. will sell its plastic dust contaminated with paint chips (spent material) to Plastic Plastic Inc. for its fence posts application. For your information, we enclosed our letter of agreement with Plastic Plastic Inc. together with the analysis of the plastic dust, both urea and acrylic.

Con't....

Given that our recycling agreement with Plastic Plastic Inc. is now in place, we would like to offer our United States customers a media recycling program whereby we will sell our plastic media to the customer and take the used plastic dust contaminated with paint chips back to Canada for recycling.

Your approval/confirmation that our PMB recycling process meets the requirements set forth in 40 CFR § 261.2 (e) (1) (i), that the PMB dust is not considered a solid waste, and is not subject to RCRA Regulations, is hereby requested.

If you would need any additional information, please contact the undersigned. Thank you.

Yours sincerely, ..

A handwritten signature in black ink, appearing to read "R. Pollard", with a stylized flourish at the end.

Ray Pollard
Plant Manager

:dc

Encl.

POLY-PACIFIC INC.

TABLE 1
METAL CONTENT OF BLAST MEDIA POWDER

Sample Description	Sample B9703	Sample A5932
Element	Content	Content
Aluminum	0.016	0.0098
Barium	0.070	0.020
Calcium	0.014	0.00067
Chromium	0.0024	0.00074
Copper	0.00019	0.00019
Iron	0.057	0.0019
Potassium	0.0015	0.00024
Magnesium	0.0063	0.0010
Manganese	0.012	0.00040
Sodium	0.021	0.0010
Phosphorus	0.0024	0.0057
Sulfur	0.051	0.0057
Silicon	0.0070	0.0019
Strontium	0.0068	0.0028
Titanium	0.0034	0.00082
Vanadium	0.00011	<0.0001
Zinc	0.505	0.0095

*NOTE: Expressed as percentage of original powder.



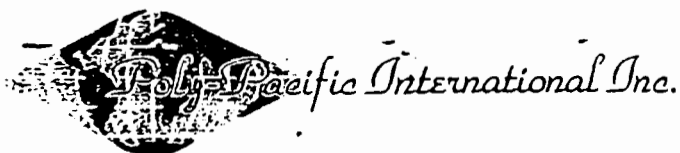
MATERIAL SAFETY DATA SHEET

SECTION I - PRODUCT SPECIFICATION		
Manufacturer's Name:	Poly-Pacific International Inc.	Emergency Phone: 1-800-663-1220 (403) 467-3612
Address:	8918-18 Street, Edmonton, Alberta, Canada T6P 1K6	
Proper Shipping Name:	N/A; Not regulated	
TDG Class:	N/A	
UN/NA:	N/A	
Packing Group:	N/A	
Chemical Family:	Acrylic Sheet	
Product:	MultiCut™ Plastic Acrylic Abrasive Media	
Product Synonyms:	Acrylic GP Acrylic Sheet;	
Use:	Light transmitting plastic, plastic blasting media	
Warning:	No warning statement	

SECTION II - INGREDIENTS		
CHEMICAL NAMES		CAS REGISTRY NO. 000080-62-6'
Molecular Formula:	Polymer	
Molecular Weight:	Polymer	
Hazardous ingredients:	<0.5% Methyl methacrylate TWA/CEILING 100ppm	
Ref:	OSHA/ACCIH For Toxicity Data see Health Hazard Data, Section V	

SECTION III - PHYSICAL DATA			
PHYSICAL PROPERTIES			
Appearance and Odour:	Granular, clear, no colour with no odour		
Boiling Point:	N/A	Freezing/melting Point:	N/A
Vapour Pressure:	N/A	Specific Gravity (Approx.)	1.19
Vapour Density:	N/A	Percent Volatile By Weight	N/A
OIL/H ₂ O Partition Coef.:	N/A	pH	N/A
Saturation in Air (by Vol):	N/A	Vapour Density	N/A
Evaporation Rate:	N/A	Solubility in Water	Negligible
Odour Threshold	See Hazardous Ingredient Section for permissible exposure limits		

SECTION IV - FIRE & EXPLOSION HAZARD DATA	
NFPA HAZARD RATING	
Fire: 1	Material that must be preheated before ignition can occur.
Health: 0	Materials which on exposure under fire conditions would offer no hazard beyond that of ordinary combustible material.
Reactivity Special: 0	Materials which in themselves are normally stable, even under fire exposure conditions, and which are not reactive with water.
Flash Point:	N/A
Flammable Limits:	N/A
Autoignition Temp:	830° F (443° C)
Decomposition Temp:	500° F (260° C)
Extinguishing Media:	Water, Carbon Dioxide, or Dry Chemical
Special Fire Fighting Procedures:	Wear self-contained, positive breathing apparatus.
Mechanical/Static Sensitivity:	None.



SECTION V - HEALTH HAZARD DATA

Effects of Over Exposure:
Toxicology information on regulated components of this product is as follows:

Overexposure to this material is not likely to cause significant acute toxic effect.

The acute oral (rat) LD50 value for methyl methacrylate monomer a(MMA) is approximately 8,400 mg/kg. Liquid MMA may cause primary eye or skin irritation. Allergic skin reactions may occur by repeated direct contact. Vapour overexposure may cause irritation to the eyes or respiratory tract and may cause central nervous system depression. MMA was not carcinogenic to rats and mice when inhaled at concentrations up to 1000 ppm for 2 years in studies sponsored by the National Toxicology Program. These concentrations produced chronic nasal irritation resulting in inflammation of the nasal cavity and degeneration of the olfactory epithelium.

First Aid:

No specific first aid procedures are necessary for accidental exposure to this product.

SECTION VI - REACTIVITY DATA

Stability:

Stable

Conditions to Avoid:

None known

Polymerization:

Will not occur

Conditions to Avoid:

None known

Incompatible Material:

Strong oxidizing agents

Hazardous Decomposition

Products:

Thermal decomposition or combustion may produce carbon monoxide, carbon dioxide and/or methyl methacrylate.

Exposure Control Methods:

Cutting, grinding or sanding may generate small quantities of methyl methacrylate

SECTION - VII - SPILL OR LEAK PROCEDURES

Steps to be Taken in Case Material is Released or Spilled:

Sweep up spills and place in a waste disposal container.

Waste Disposal Method:

Disposal must be made in accordance with applicable governmental regulations.

SECTION - VIII - SPECIAL PROTECTION INFORMATION

Special Precautions:

Handling and storage/other : None

W.H.M.S.:

Not WHMIS controlled.

SECTION IX - SPECIAL PRECAUTIONS

Precautions to be Taken in Handling and Storing and/or Other Precautions:

Store in closed, properly labeled containers in cool ventilated area. Keep away from heat, open flames and oxidizing agents. Do not transfer to unmarked containers. Determine compliance with OSHA 1910.1025 and 1910.17.

Important

The information contained herein is based on technical data which is believed to be reliable, and is furnished without warranty of any kind. The contained data is intended to supplement other information gathered by the employer, who must make an independent determination of suitability and completeness of all such information gathered in order to assure proper use and the safety and health of employees.



MATERIAL SAFETY DATA SHEET

SECTION I - PRODUCT SPECIFICATION		
Manufacturer's Name:	Poly-Pacific International Inc.	Emergency Phone: 1-800-663-1220 (403) 467-3612 Formula: Hard
Address:	8918-18 Street, Edmonton, Alberta, Canada T6P 1K6	
Proper Shipping Name:	Amino Thermoset	
Chemical Type:	Amino Resin	
Product:	MultiCut™ Plastic Abrasive Media	

SECTION II - INGREDIENTS		
Chemical Names:	70% Polymerized Urea Molding compound 28% Alpha Cellulose Filler 2% Pigments and Additives	CAS REGISTRY NO. 9011-05-6

SECTION III - PHYSICAL DATA		
Boiling Point (Degrees F.) (Approx.):	N/A	
Specific Gravity (Approx.):	1.5	
Percent solid(s) by Weight (%):	100	
Vapour Density:	N/A	
Evaporation Rate:	N/A	
Solubility in Water:	None	
Appearance and Odour:	Granular, Multi-Color With No Odor	

SECTION IV - FIRE & EXPLOSION HAZARD DATA		
Flammable Limits:	Lel: N/A Uel: N/A	
Extinguishing Media:	Carbon Dioxide, Dry Chemicals or Water Fog	
Special Fire Fighting Procedures:	Do not use high pressure water stream. Fog nozzles are preferable. Water may be used to cool containers.	
Unusual Fire and Explosion Hazards:	Maintain normal good housekeeping for control of dust. High dust concentration could form explosive mixture with air.	

SECTION V - HEALTH HAZARD DATA		
Effects of Over Exposure:	Conditions to avoid: N/A	
Threshold Limit Value:	N/A for mixture	
Health Hazards:	Slightly acute	
Permissible Exposure Limit:	None	
Other Limit:	None	
Emergency and First Aid Procedures:	In case of irritation, flush eyes with plenty of water for 15 minutes. If irritation persists, call physician. Inhalation - get fresh air. Ingestion - induce vomiting immediately by giving two glasses of water, call physician. Flush skin with water.	



SECTION VI - REACTIVITY DATA	
Stability:	Stable
Conditions to Avoid:	None known
Incompatibility:	No specific incompatibility
Hazardous Decomposition	
Products:	Smoke, Carbon Dioxide, Carbon Monoxide
Hazardous Polymerization:	Will not occur
Conditions to Avoid:	None known

SECTION - VII - SPILL OR LEAK PROCEDURES	
Steps to be Taken in Case Material is Released or Spilled:	Remove from open flame, sparks, hot surface and oxidizing agents. Clean up.
Waste Disposal Method:	Use approved sanitary landfill or incineration. Do not incinerate in closed containers. Disposal must be carried out in accordance with local state and federal regulations.

SECTION - VIII - SPECIAL PROTECTION INFORMATION	
Respiratory Protection:	Where required use NIOSH/MSHA approval respiratory protection in compliance with OSHA regulations (i.e. 1910.134).
Ventilation - Local Exhaust:	Where necessary to maintain exposure levels to OSHA.
Special Explosion Proof:	May be necessary if aired or airveyed.
Mechanical (General):	Permissible levels acceptable.
Protective Gloves:	Normal work gloves advisable.
Eye Protection:	Chemical Safety Goggles.

SECTION IX - SPECIAL PRECAUTIONS	
Precautions to be Taken in Handling and Storing and/or Other Precautions:	Store in closed, properly labeled containers in cool ventilated area. Keep away from heat, open flames and oxidizing agents. Do not transfer to unmarked containers. Determine compliance with OSHA 1910.1025 and 1910.17.

N/A: Not applicable.

Important
The information contained herein is based on technical data which is believed to be reliable, and is furnished without warranty of any kind. The contained data is intended to supplement other information gathered by the employer, who must make an independent determination of suitability and completeness of all such information gathered in order to assure proper use and the safety and health of employees.

PLASTIC PLASTIC INC.
R R # 2, ST THOMAS, ONTARIO, N5P 3S6
T. 519-633-5168 F 519-633-2589

July 26, 1996

Via Fax (403) 464-1852

Mr. Thomas Lam
Poly-Pacific International Inc.
8918 - 18 Street
EDMONTON, AB
T6P 1K6

Dear Mr. Lam:

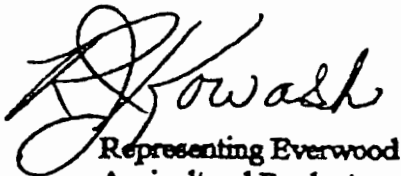
Re: MultiCutTM Plastic Blasting Media - Spent Material

This is to confirm that we have successfully tested your spent material (both Urea and Acrylic) in our production of our agricultural plastic fence poles application.

With the approval received from the Ministry of Environment and Ministry of Transportation, we are now ready to purchase your spent material as per our agreement.

We are looking forward to a long-term mutually beneficial relationship with you.

Yours truly,



Representing Everwood
Agricultural Products,
Ron Kowalski
Plastic Plastic Inc.

RK/jw



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

REGION 4

345 COURTLAND STREET, N.E.
ATLANTA, GEORGIA 30365

JAN 09 1996

4WD-RCRA

CERTIFIED MAIL
RETURN RECEIPT REQUESTED

Mr. G. Alan Perkins
Williams & Anderson
Twenty-Second Floor
111 Center Street
Little Rock, Arkansas 72201

SUBJ: Composite Leasing Corporation (Composite) Plastic Media
Blasting (PMB) Recycling Program

Dear Mr. Perkins:

The purpose of this letter is to respond to your letter on behalf of Composite, dated October 5, 1995, requesting confirmation of the regulatory exemption of recycled acrylic plastic dust resulting from the PMB of paints and coatings from aircraft and aircraft components. It is claimed, in your letter, that the PMB dust is used as an ingredient in an industrial process to make a product, without reclamation. As such, it should not be considered a solid waste. And, therefore, it is not subject to RCRA regulations.

EPA reviewed the information provided and concluded that the presence of metals (chromium and cadmium), in the PMB dust, warranted further examination. It is stated in your letter that: *PMB dust product which consists of 96 to 99 percent acrylic plastic, sometimes exhibits the toxicity characteristic for chromium and/or cadmium due to the inclusion of minute paint chips.* EPA, by telephone, communicated its concern regarding this matter. Specifically, EPA requested additional supporting documentation and an explanation on the benefits provided by the paint chip impurities to the finished recycled product.

In your reply letter to EPA's request, dated November 29, 1995, you stated that the chromium and cadmium are contained in the pigments in the paint chips. These chips give the dust product a uniformly grayish color and opaque condition. Both these characteristics are important to the appearance of the recycled finished product. In order to achieve the color and opaqueness desired, without the benefit of PMB dust, the recycler must add pigments or pigmented material. The pigments added contain levels of chromium, cadmium, and/or other heavy metals, in similar or greater amounts than the PMB dust already contains.

After reviewing your letters and supporting documentation, EPA has determined that the PMB recycling process meets the requirements set forth in 40 CFR § 261.2(e)(1)(i). Therefore, within the management practices described in your documentation, the PMB dust is not considered a solid waste and is not subject to RCRA Regulations.

If you have any questions, please contact Mr. Carlos E. Merizalde, of my staff, at (404) 347-7603, ext. 6401.

Sincerely,

A handwritten signature in cursive script, appearing to read "Alan Farmer".

G. Alan Farmer
Chief, RCRA Branch
Waste Management Division

cc: Mr. Jerry B. Banks, MDEQ Director Hazardous Waste Division

STATE & ENFORCEMENT CONTACTS

John A. Poole, Jr., Chief
Land Division
Alabama Department of Environmental
Management
P.O. Box 301463
Montgomery, AL 36130-1463
334-271-7730 FAX: 271-7950
Enf. 271-7738 FAX: 270-5612

Mr. Satish Kastury, Administrator
Bureau of Waste Planning and Regulation
Florida Department of Environmental
Protection
Twin Towers Office Building
2600 Blair Stone Road
Tallahassee, FL 32399-2400
904-488-0300 FAX: 921-8061
Enf. - Mike Redig 488-0300 FAX: 921-8061

Ms. Jennifer R. Kaduck, Chief
Hazardous Waste Management Branch
Environmental Protection Division
Georgia Department of Natural
Resources
Floyd Towers East, Room 1154
205 Butler Street, SE
Atlanta, GA 30334
404-656-4713 FAX: 651-9425
Enf. - Jennifer Kaduck 656-7802 FAX: 651-5778
Shelly Stroud

Mr. Robert H. Daniell, Director
Division of Waste Management
Kentucky Department for Environmental
Protection
Fort Boone Plaza, Building #2
18 Reilly Road
Frankfort, KY 40601
502-564-6716 FAX: 564-4049
Enf. - James Kirby FAX: 564-2705

Mr. Jerry Banks, Chief
Hazardous Waste Division
Mississippi Department
of Environmental Quality
P.O. Box 10385
Jackson, MS 39289-0385
601-961-5062
Enf. - Jerry Banks
FAX: 961-5741

Mr. William L. Meyer, Director
Solid Waste Management Division
North Carolina Department of
Environment, Health and
Natural Resources
P.O. Box 27687
Raleigh, NC 27611-7687
919-733-2178 FAX: 715-3605
Enf. - Doug Holyfield 733-2178
FAX: 715-3605

Mr. Hartsill Truesdale, Chief
Bureau of Solid and Hazardous
Waste Management
South Carolina Department of
Health and Environmental
Control
2600 Bull Street
Columbia, SC 29201
803-896-4000 FAX: 734-5199
Enf. - Cheryl Coleman 734-5205
FAX: 734-5199

Mr. Tom Tiesler, Director
Division of Solid Waste
Management
Tennessee Department of
Environment and Conservation
5th Floor, L & C Tower
401 Church Street
Nashville, TN 37243-1535
615-532-0780 FAX: 532-0886
Enf. - Audrey Baker 532-0866
FAX: 532-0614

Revised: April 3, 1996 and April 9, 1997

RCRA Inspection Report

Inspector and Author of Report

Steven R Bailey, EEIT
Environmental Compliance and Enforcement Division

Facility Information

Hydromex, Inc.
700 Industrial Parkway
Yazoo City, MS 39194
(662) 746-8555

Responsible Official

Mr. Gene Pridemore

Inspection Participants

G. Pridemore, Hydromex
S. Bailey, MDEQ
H. Gilliland Jr., US EPA Region 4

Date and Time of Inspection

June 25, 2002 9:50 am

Applicable Regulations

Mississippi Hazardous Waste Management Regulations (MHWMR) Parts 260-266, 268-270.

Purpose of Inspection

To conduct an unannounced compliance evaluation inspection and determine the facility's compliance with all applicable regulations.

Facility description

Hydromex Inc. is located in Yazoo City, MS and is owned and operated by Mr. Gene Pridemore. Hydromex produces blocks made from cement and used/or spent blasting material. The used blasting material is comprised of plastic, aluminum oxide and glass bead media. The blasting material is primarily used in sand blasting aircraft from various military installations across the U.S. The raw blasting material is supplied by U S

Technology (UST) located in Canton, Ohio. Mr. Ray Williams is the President of UST. The military installations lease the material from UST with the agreement that UST will recycle the material. According to records of UST, the first year Hydromex was in operation, 2000, they received 2,475,679 pounds of spent media. According to records provided by Mr. Pridemore, Hydromex received 9,926,673 pounds of spent media in 2001. UST's records for the same year, 2001, indicated 9,835,639 pounds received at Hydromex. As of June 2002, Hydromex had received 2,475,679 pounds of spent media.

Hydromex serves as the recycling center for the spent blasting media. Hydromex makes several different products from the spent media. The Super Block is comprised of basically 78% media and 22% cement. The Super Block and Super "O" block weighs approximately 700 pounds. Hydromex also makes a 16" x 32" block. These blocks were developed to build a model home to promote sales of these blocks. The 16" x 32" blocks weigh approximately 300 pounds. Mr. Pridemore stated the compressive strength of those blocks varied around 2200 pounds per square inch (psi). NOTE: Several of the blocks that were completed are degrading and falling apart in the yard in which they are stored.

Initially, the Mississippi Department of Environmental Quality (MDEQ) was contacted regarding whether Hydromex required any permits for the facility to start production. Mr. David Lee, Chief, Timber Branch, did reply to the request on December 20, 2001. In summary, Mr. Lee stated that no permits were required and that the making of those products was acceptable if:

- The spent media is non-hazardous, or
- The spent abrasives, if hazardous per TCLP test, are used to make the finished products without first being reclaimed (excluding highly toxic and/or mobile constituents).

Mr. Lee made no mention of building storage pads with the spent abrasives in the aforementioned letter.

Subsequently, Mr. Pridemore stated that none of the material failed the Toxicity Characteristic Leaching Procedure (TCLP). This method is used in determining if certain constituents will leach from the material over a period of time. More recently Mr. Ray Williams of UST stated that approximately 30% of the spent media failed the TCLP for chromium, lead, and other metals and they viewed all the material as hazardous. Mr. Pridemore, as of 2002, has made the statement that more than 50% has failed the TCLP for RCRA metals. Because of the conflicting statements made by Mr. Williams and Mr. Pridemore, samples were taken of the raw spent media. The results are reported in Table 1.4.

Hydromex is located in a large metal industrial building. The bulk of the material is used in building pads around this facility. The pads are constructed by first digging a trench approximately 20 feet wide and of various lengths. Some as long as 150 feet. Trenches

as deep as 4 to 5 feet have been photographed at various times. After the trenches have been excavated sand is placed in bottom and covered with a plastic barrier. A substrate or slurry is then mixed with 8500 pounds of media and 600 pounds of cement in a common cement truck and poured into the trench. This mixture never cures and is very loose material. Photo 1.1 below shows the slurry as it is poured in the base.



Photo 1.1 Substrate or slurry added to the trench before
The finished pad is added.

This material comprises about 2 to 3 feet of depth of the trench. A mixture of 8500 pounds of spent media and 2400 pounds of cement is used to make the final slab that is 8 to 10 inches thick. Mr. Pridemore also stated the compressive strength of this final slab was approximately 2200 psi. Photo 1.2 below shows Hydromex preparing to pour the final slab after the substrate has been added.



Production data has been obtained from Hydromex. Table 1.1 and Table 1.2 shows the production rates of the different finished products for the year 2001. Table 1.3 shows production data for the year 2002.

Table 1.1 Production Data for 2001

Approximate weight Date	700 Super Blocks	700 "O" Blocks	400 16 x 32	2060 Revetments	13281 Pads	8500 Base Pads	Total used media
01-Jan	616	63					370,734
01-Feb	560	57					336,882
01-Mar	616	60		10			385,164
01-Apr	560	54		10			351,312
01-May	644	59		12			403,120
01-Jun	588	18		3	91		1,278,382
01-Jul	252				110		1,277,102
01-Aug	252				115		1,328,898
01-Sep	224				100		1,158,222
01-Oct	336						183,456
01-Nov	336						183,456
01-Dec	252						137,592
Production Totals	5236	311	0	35	416		7,394,319

Table 1.2 Production Data for 2001

Approximate weight Date	700 Super Blocks	700 "O" Blocks	400 16 x 32	2060 Revetments	13281 Pads	8500 Base Pads	Total used media
01-Jan	77	63					76,440
01-Feb	79	57					74,256
01-Mar	132	55		10			118,170
01-Apr	112	20		7			462,460
01-May	112	34		8			465,883
01-Jun	98	1		1	76		425,170
01-Jul	126				110		550,287
01-Aug	70				115		323,201
01-Sep	56				100		261,156
01-Oct	168				15		686,125
01-Nov	154						628,948
01-Dec	112						457,417
Production Totals	1296	230		26	416		4,529,514

Table 1.3 Production Data for 2002

Approximate weight Date	700 Super Blocks	400 16 x 32	2060 Revetments	13281 Pads	8500 Base Pads	10500 Finish pads	
02-Jan	140	30			5		118,950
02-Feb	28	30			25	15	313,248
02-Mar	28				25.5	30	430,053
02-Apr	84	120			70	18	694,824
02-May	28	120			70	13	623,298
02-Jun		56			106	14	834,912
Production Totals	308	356			301.5	90	3,015,285

Inspections

Inspection of May 2, 2002

Because of the nature of the material, Mr. Lee and Mr. Steven Bailey inspected the facility on May 2, 2002. During that inspection random samples were taken of the raw spent media. Table 1.4 below shows those results. One out of five samples showed that it a characteristic waste for chromium. A sample was also taken of the water in the drum washout sump. This sump discharged directly into a dry ditch thence into an unnamed tributary to the Yazoo River. Those results are also included in Table 1.4.

Table 1.4 Spent media analysis.

	As*	Cd*	Cr*	Se*	Ba*	Pb*	Hg*	Au*
Spent Media 1	ND	193	4000	11.4	884	338	ND	ND
Spent Media 2	ND	34100	8000	12	1220	370	ND	ND
Spent Media 3	ND	268	49	18	81	501	ND	ND
Spent Media 4	ND	222	125	10	1820	108	ND	ND
Spent Media 5	ND	485	1700	10	691	15.2	ND	ND
Spent Media 6	ND	498	3500	ND	578	4200	ND	ND
Water sample	ND	235	1400	10.1	1100	91	ND	ND

* Sample results are reported in parts per billion (ppb).

The storage pads were also inspected. At the time of this inspection with Mr. Lee, there were a few completed storage pads. New pads were under construction at this time. After the above mentioned sample results were completed, it was then determined to sample the actual storage pads since they were "in the ground" and can come in contact with groundwater sources. With Yazoo City being partially located in the Delta of Mississippi geologically, ground water sources are typically higher than in the more hilly regions of the area. Mr. Pridemore also stated that at this point no finished products had been sold, but Hydromex had Holloway Construction under contract to purchase 1420 Super Blocks. These blocks were to be used as drive barrier on a lake levee to prevent vehicles from veering into the lake.

Inspection of June 25, 2002

EPA Region IV also completed an inspection of the facility. Mr. Houston Gilliland of EPA met with Gene Pridemore and myself on June 25, 2002. Several new pads had been constructed and several more bases had been excavated out to start new pads. Mr. Pridemore stated there were approximately 13,000 drums of spent media on hand. The new pads were used to store the remaining drums. No samples were taken during this inspection.

Sampling and Inspection of August 22, 2002

Because of the hazardous nature of the material, MDEQ conducted sampling of the pads and surrounding area to determine the extent and type of contamination. MDEQ's hazardous waste sampling team was mobilized to accomplish the sampling. Mr. Richard Harrell conducted the sampling effort. Several samples were taken of the ditch surrounding the pads, the leachate from the substrate or base material and the finished pads, as well as the area where excessive spillage had occurred and the ditch near the old drum-washing sump. The sample results are listed in Table 1.5 below:

Table 1.5 Hydromex Sampling Results

	As*	Cd*	Cr*	Se*	Ba*	Pb*	Cu*	Ni*	Zn*
Soil 1	ND	2000	610	ND	1020	ND			
Soil 2	ND	234	126	ND	593	164			
Soil 3	ND	3000	889	ND	612	172			
Soil 4	ND	6320	725	13	425	92			
S05	ND	12400	5000	ND	489	1940			
S06	ND	14000	4820	ND	584	2100			
S07	ND	ND	ND	ND	ND	ND			
Drum Bay	ND	2400	455	9	927	243			
Old Sump	ND	4000	1400	ND	1500	125			
Pad01	ND	18100	4730	ND	630	4710			
Pad02	ND	80	931	ND	473	ND			
Pad03	ND	3650	3650	ND	2230	2210			
Water01	ND	109	10400	ND	159	1100	735	639	150
Water02	ND	6.4	15	10.1	137	5	13.4	6.31	15
Water03	ND	27	905	7	177	312	77.1	65.3	56.1
Water04	ND	849	21000	ND	89	1100	2030	1400	1400

* Samples results are reported in parts per billion (PPB).

Findings.

Pursuant to 40 CFR Part 261, Section 261.2(e)(1), Materials are not considered a solid waste when they can be shown to be recycled by being used or reused as effective substitutes for commercial products or used as an ingredient to make a viable product. If however, pursuant to 40 CFR 261.2(e)(2), materials are considered a solid waste even if recycling involves use, reuse or recycling if the material is used in a manner constituting disposal, used to produce products that are applied to the land, or are accumulated speculatively.

Based upon the findings of the aforementioned inspections, EPA and Mississippi Department of Environmental Quality has determined that the solid waste exemption claimed by Hydromex for the pads is not valid because the spent blasting material received from offsite and used in making the pads are being used in a manner constituting disposal. In addition, the spent blasting material also appeared not to be an effective substitute for a commercial chemical product or ingredient to make a viable product.

Similarly, MDEQ and EPA believes that the solid waste exemption claimed by Hydromex for the blocks have a valid commercial use.

Section 3005(a) of RCRA, 42 USC 6925(a) and 40 CFR 270.1 requires that the owner or operator of a hazardous waste treatment, storage and/or disposal facility obtain a RCRA permit prior to the storage, treatment or disposal of such waste. At no time during any inspection, Hydromex did not have a RCRA operating permit to treat, stored, or dispose of hazardous waste at it's facility.

Based upon the result of the inspection completed by MDEQ and EPA, since the spent blasting media is considered a solid waste, and testing has shown a large percentage of the material is D006 and D007 hazardous waste, Hydromex is operating an illegal hazardous treatment, storage and disposal facility because it does not have a RCRA permit.

Specifically, Hydromex is illegally receiving a hazardous waste from offsite in the form of the spent blasting material. This material is being stored throughout the facility in containers. Hydromex is also treating the spent blasting with cement in a concrete mixer. In Addition, the slurry mixture consisting of spent blasting material, cement, and water is being disposed of in trenches that become the pads as well as for the production of blocks that come into contact with the ground. Hydromex also has failed to insure that the waste meets the treatment standards required for waste or waste derived products to be disposed or used in contact with the ground.

Therefor, Hydromex is in violation of Mississippi Hazardous Waste Management Regulations, Parts 260-270 and 3005 RCRA, 42 USC 6925(a).

Hydromex is also in violation of MHWMR 268.4(a) and 3004 (g) and (m) of RCRA, which state that a prohibited waste identified in the table "Treatment Standards for

Hazardous Wastes” may be land disposed only if it meets the requirements found in the Table. The table states that wastes that exhibit, or are expected to exhibit, the characteristic of toxicity for Chromium must meet a treatment standard of 0.60 mg/L, and wastes that exhibit, or are expected to exhibit, the characteristic of toxicity for Cadmium must meet a standard of 0.11 mg/L in TCLP extract and meet the treatment standards outlined in 268.48 for underlying constituents.

Signed

Steven R Bailey
EEIT

Date



STATE OF MISSISSIPPI
PHIL BRYANT
GOVERNOR
MISSISSIPPI DEPARTMENT OF ENVIRONMENTAL QUALITY
GARY C. RIKARD, EXECUTIVE DIRECTOR

Via PDF and Regular U.S. Mail

RCVD 23 OCT 2014

October 10, 2014

Laura L. Mills, Esq.
Mills, Mills, Fiely & Lucas
150 Smokerise Drive
Wadsworth, Ohio 44281

Re: Mississippi Commission on Environmental Quality v. U.S. Technology Corporation

Dear Ms. Mills:

In response to your letter to me dated October 6, 2014, the Mississippi Department of Environmental Quality ("MDEQ") requires US Technology to collect its own samples of the treated wastes at the Yazoo City site. Contrary to US Technology's request, MDEQ employees (i.e. Steve Bailey) do not collect samples on behalf of regulated parties. MDEQ may request to be present at any sampling events. MDEQ will split samples of the treated wastes with US Technology and decide on a lab for analysis.

MDEQ requests that US Technology immediately contact Steve Bailey and Tyler Hardy of MDEQ and schedule a time and date by the end of October to resample the wastes at the Canton Landfill. US Technology shall collect samples of the wastes at the Canton Landfill and MDEQ will collect split samples. Each party will analyze the samples at their chosen labs.

MDEQ appreciates the lab data you e-mailed related to the samples collected by US Technology at the Canton Landfill. MDEQ will review US Technology's lab data. MDEQ sent its data in an e-mail earlier today.

MDEQ requires, as proposed by US Technology, to be provided updates and copied on any requests made to U.S. Environmental Protection Agency, Region 4, to recycle the wastes at the Yazoo City site.

LEGAL DIVISION

POST OFFICE BOX 2261 • JACKSON, MISSISSIPPI 39225-2261 • TEL: (601) 961-5171 • FAX: (601) 961-5349 • www.deq.state.ms.us
AN EQUAL OPPORTUNITY EMPLOYER

As expressed in your letter, MDEQ expects payment of the \$22,500 penalty required in the Third Amendment to Agreed Order No. 4614 03 by the due date of Wednesday, October 15, 2014.

Related to the stipulated penalties (\$5000 a week which shall be assessed to US Technology under the Third Amendment to Agreed Order No. 4614 03) for failure to properly dispose of the wastes at Yazoo City by Tuesday, October 21, 2014, MDEQ is not willing to waive the stipulated penalties at this time as you requested. However, MDEQ will consider waiving some portion of the penalties upon proper disposal of the wastes if US Technology demonstrates "good faith" in moving forward to dispose of the wastes in Yazoo City and at the Canton Landfill.

If you have any questions related to this matter, please contact me at (601) 961-5260.

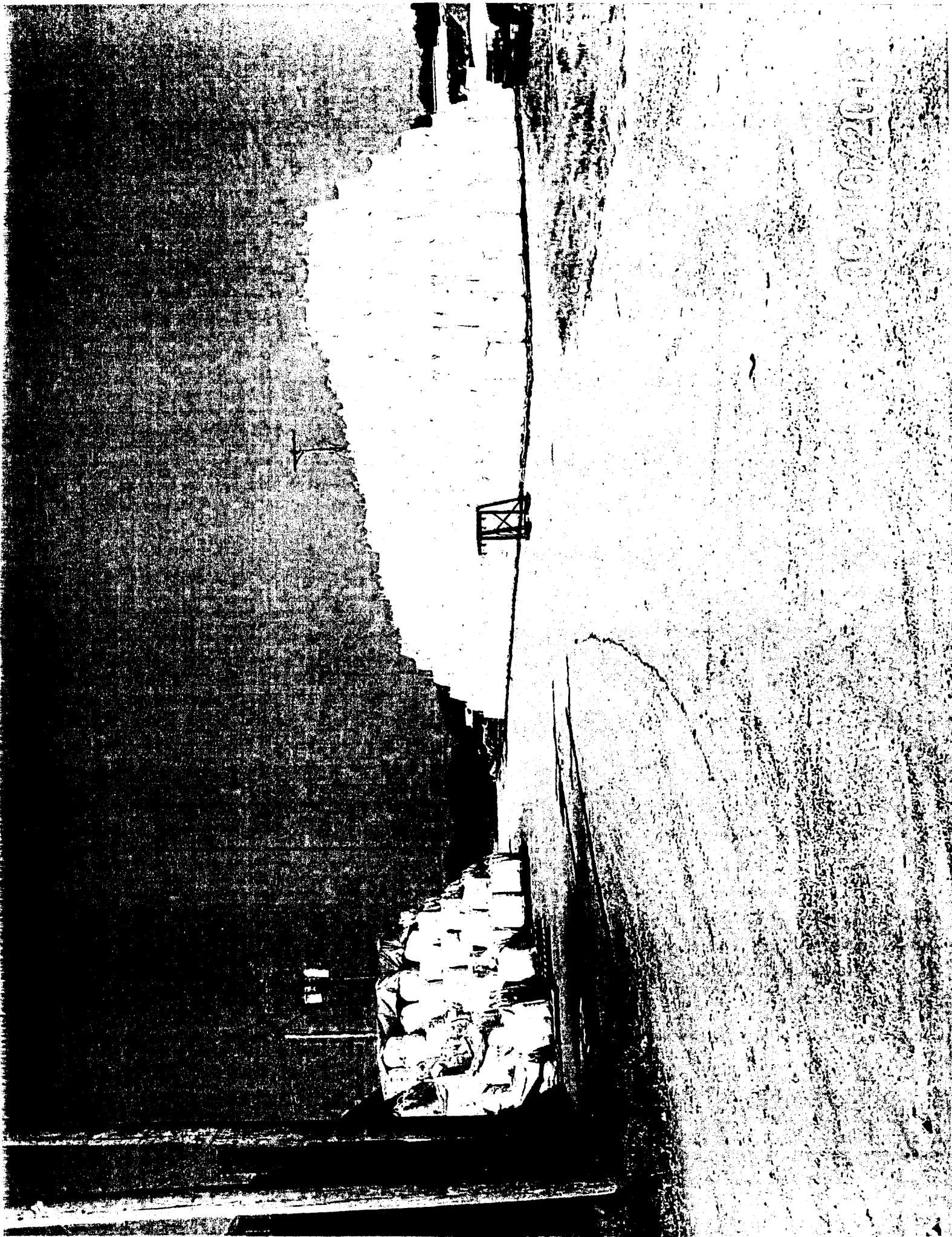
Very truly yours,

A handwritten signature in black ink, appearing to read "Roy Furrh", with a stylized flourish at the end.

Roy Furrh
General Counsel

RF:dac

Cc: Larry Lamberth, U.S. EPA, Region 4
Richard Harrell
Chris Wells
Steve Bailey
Doug Upton





UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

REGION 4
ATLANTA FEDERAL CENTER
61 FORSYTH STREET
ATLANTA, GEORGIA 30303-8960

AUG 26 2013

CERTIFIED MAIL
RETURN RECEIPT REQUESTED

Ray Williams
President, US Technology Services
380 Allied Industrial Blvd
Macon, Georgia 31206

SUBJ: RCRA Compliance Evaluation- Inspection
US Technology Services
EPA ID. No.: GAR 000 061 838

Dear Mr. Williams:

On April 15, 2013, a Compliance Evaluation Inspection (CEI) was conducted by the U.S. Environmental Protection Agency at the US Technology Services facility in Macon, Georgia to determine the facility's compliance status with the Resource Conservation and Recovery Act (RCRA). This RCRA CEI was an EPA-lead inspection.

Enclosed is the EPA RCRA Site Inspection Report which indicates that deficiencies of RCRA regulations were discovered. A copy of this report has also been forwarded to the Georgia Department of Natural Resources/ Environmental Protection Division (GAEPD).

If you have any questions regarding this matter, please contact Héctor M. Danois, of my staff, by telephone at (404) 562-8556 or by email at danois.hector@epa.gov.

Sincerely,

A handwritten signature in black ink, appearing to read "Larry Lamberth".

Larry Lamberth
Chief, South Enforcement and Compliance Section
RCRA and OPA Enforcement
and Compliance Branch

Enclosure

cc: Amy Potter, GAEPD

RCRA Inspection Report

1) Inspector and Author of Report

Héctor M. Danois
Environmental Engineer
RCRA Enforcement and Compliance Branch
EPA Region 4, AFC - 10th Floor
61 Forsyth Street
Atlanta, Georgia 30303
(404) 562 - 8556

2) Facility Information

US Technology Services
380 Allied Industrial Blvd
Macon, Georgia 31206

EPA ID. No.: GAR000061838

3) Responsible Official

Ray Williams, President
US Technology Services

4) Inspection Participants

Marco Reyes	US Technology Services
Aaron Bryant	US Technology Services
Parvez Mallick	U.S. EPA Region 4
Héctor M. Danois	U.S. EPA Region 4

5) Date of Inspection

April 15, 2013

6) Applicable Regulations

RCRA Sections 3005 and 3007
40 Code of Federal Regulations (C.F.R.) Parts 260 - 266, 268, 270 and 273
Georgia Hazardous Waste Management Act, as amended, O.C.G.A. § 12-8-60 *et seq.* Resource
Conservation and Recovery Act (RCRA) Sections 3005 and 3007(42 U.S.C. §§ 6925 and 6927)
and the Rules for Hazardous Waste Management (Ga. Comp. R. & Regs.) Chapter 391-3-11

7) Purpose of Inspection

The purpose of the inspection was to conduct an unannounced U.S. Environmental Protection Agency Compliance Evaluation Inspection (CEI) and determine the facility's compliance status with the Resource Conservation and Recovery Act (RCRA).

Some materials that are recycled are classified as solid wastes, while others are exempt from regulation. Section 261.2(c) designates as solid wastes certain materials that are recycled in particular manners (i.e., used in a manner constituting disposal, burned for energy recovery, reclaimed, and speculatively accumulated). Other materials that are recycled through use or reuse of the material may qualify for exemptions from the solid waste definition under Section 261.2(e).

When a material is recycled, its regulatory classification (i.e., whether or not it is a solid waste, and potentially a regulated hazardous waste) depends on two factors: what type of secondary material is being recycled and what type of recycling is occurring. Although, GAEPD gave an exemption to the SPBM for the reuse on concrete block, the spent paint chips/plastic mixture, heavy pain chips and baghouse dust can be considered by-products as defined as 40 C.F.R. § 261.2(c)(3). By-product is defined as “a material that is not one of the primary products of a production process and is not solely or separately produced by the production process.”

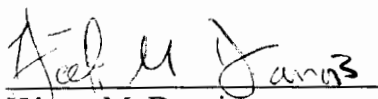
Use in a manner constituting disposal [40 C.F.R. § 261.2(c)(1)] is where wastes are placed directly on the land in a manner that constitutes disposal or are used to products that are applied to the land. 40 C.F.R. § 261.2 Table 1 establishes that, a by-product that is used in a manner constituting disposal is considered a solid waste. 40 C.F.R. § 262.11 requires a person who generates a solid waste must determine if that waste is a hazardous waste.

UT appears to be in violation of 40 C.F.R. § 262.11. This regulation requires a person who generates a solid waste must determine if that waste is a hazardous waste. UT appeared to be in violation by no making a waste determination on the baghouse dust and paint chips.

Recordkeeping


At the time of the inspection, UT was not generating any waste and was inspected as a conditionally exempted small quantity generator (CESQG).

10) Signed


Héctor M. Danois
Environmental Engineer

6-27-13
Date

11) Concurrence


Larry Lamberth
Chief, South Enforcement and Compliance Section
RCRA and OPA Enforcement and Compliance Branch

08/26/13
Date



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 4
ATLANTA FEDERAL CENTER
61 FORSYTH STREET
ATLANTA, GEORGIA 30303-8960

AUG 27 2013

CERTIFIED MAIL
RETURN RECEIPT REQUESTED

Ray Williams
President, US Technology Services
380 Allied Industrial Blvd.
Macon, Georgia 31206

SUBJ: RCRA Compliance Evaluation Inspection
US Technology Services
EPA ID. No.: GAR 000 061 838

Dear Mr. Williams:

On April 15, 2013, a Compliance Evaluation Inspection (CEI) was conducted by the U.S. Environmental Protection Agency at the US Technology Services (UT) facility in Macon, Georgia, to determine the facility's compliance status with the Resource Conservation and Recovery Act (RCRA). This RCRA CEI was an EPA-lead inspection.

Pursuant to Section 3007 of RCRA, 42 U.S.C. § 6927, UT management is hereby directed to respond, fully and truthfully, within thirty (30) calendar days of receipt of this letter, to the Information Request enclosed herein. Compliance with this request for information is mandatory, and information provided by UT may be used by the EPA in future enforcement actions. Failure to respond fully and truthfully to each and every question or information request within thirty (30) calendar days of receipt of this letter, or to adequately justify such failure to respond, may result in further enforcement action against UT by the EPA pursuant to Section 3008 of RCRA, 42 U.S.C. § 6928.

Your response to this request for information should be mailed to:

Larry Lamberth
Chief, South Enforcement and Compliance Section
RCRA and OPA Enforcement and Compliance Branch
U.S. EPA, Region 4
61 Forsyth St., SW
Atlanta, Georgia 30303-3104

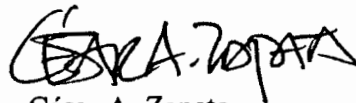
The information requested herein must be provided notwithstanding its possible characterization as confidential information or trade secrets. UT may, if desired, assert a business confidentiality claim covering part or all of the information requested, in the manner described in 40 C.F.R. § 2.203(b), by attaching to such information, at the time it is submitted, a suitable notice employing language such as "trade secret" or "proprietary" or "company confidential." Information covered by such a claim will be disclosed by the EPA only to the extent and only by means of the procedures set forth in 40 C.F.R. Part 2, Subpart B. If no such claim accompanies the information when it is received by the EPA, it may

be made available to the Public by the EPA without further notice to UT. The EPA will construe the failure to furnish a confidentiality claim with your response to this letter as a waiver of that claim. UT should read the above-cited regulations carefully before asserting a business confidentiality claim, since certain categories of information are not properly the subject of such a claim.

This Information Request is not subject to the approval requirement of the Paper Reduction Act of 1980, 44 U.S.C. § 3501 et seq.

Should you have any questions on this matter, please contact Mr. Héctor M. Danois, of my staff, at (404) 562-8556.

Sincerely,

A handwritten signature in black ink, appearing to read "César A. Zapata", with a stylized flourish at the end.

César A. Zapata
Chief, RCRA and OPA Enforcement
and Compliance Branch
RCRA Division

Enclosure

ENCLOSURE

INFORMATION REQUEST

Instructions

1. Identify the person(s) responding to these Information Requests on behalf of Respondent.
2. A separate response must be made to each of the Information Requests set forth herein.
3. Precede each answer with the number of the Information Request to which it corresponds.
4. In answering each Information Request question, identify all documents and persons consulted, examined, or referred to in the preparation of each response and provide true and accurate copies of all such documents.
5. If information not known or not available to you as of the date of submission of a response to this Information Request should later become known or available to you, you must supplement your response to the EPA. Moreover, should you find at any time after the submission of its response that any portion of the submitted information is false or misrepresents the truth; you must notify the EPA thereof as soon as possible.
6. For each document produced in response to this Information Request, indicate on the document, or in some other reasonable manner, the number of the question to which it responds.
7. Where specific information has not been memorialized in a document, but is nonetheless responsive to the Request, you must respond to the question with a written response.
8. If information responsive to this Information Request is not in your possession, custody or control, then identify the person from whom such information may be obtained.
9. If you have reason to believe that there may be persons able to provide a detailed or complete response to any Information Request question or who may be able to provide additional responsive documents, identify such persons and the additional information or documents that they may have.
10. The information requested herein must be provided even though the Respondent may contend that it includes possibly confidential information or trade secrets. **You may, if you desire, assert a confidentiality claim** covering part or all of the information requested, pursuant to Section 3007(b) of RCRA, 42 U.S.C. Section 6927(b), Sections 104(e)(7)(E) and (F) of CERCLA, 42 U.S.C. Sections 9604(e)(7)(E) and (F), and 40 C.F.R. Section 2.203(b), by attaching to such information at the time it is submitted, a cover sheet, stamped or typed legend, or other suitable form of notice employing language such as "**trade secret**," or "**proprietary**," or "**company confidential**." Information covered by such a claim will be disclosed by the EPA only to the extent, and only by means, of the procedures set forth in statutes and regulation set forth above. If no such claim accompanies the information when it is received by the EPA, it may be made available to the public by the EPA without further notice to you. You should read the above cited

regulations carefully before asserting a business confidentiality claim, since certain categories of information are not properly the subject of such a claim.

INFORMATION REQUEST

Definitions

The following definitions shall apply to the following words as they appear in this Enclosure.

1. The terms "**AND**" and "**OR**" shall be construed either disjunctively or conjunctively as necessary to bring within the scope of this Information Request any information which might otherwise be construed to be outside their scope.
2. The term "**DISPOSAL**" shall mean the discharge, deposit, injection, dumping, spilling, leaking, or placing of any solid waste or hazardous waste into or on any land or water so that such solid waste or hazardous waste or any constituent thereof may enter the environment or be emitted into the air or discharged into any water, including groundwater.
3. The term "**DOCUMENT**" and "**DOCUMENTS**" shall include writings of any kind, formal or informal, whether or not wholly or partially in handwriting (including by way of illustration and not by way of limitation), any invoice, receipt, endorsement, check, bank draft, canceled check, deposit slip, withdrawal slip, order, correspondence, record book, minutes, memorandum of telephone and other conversations including meetings, agreements and the like, diary calendar, desk pad, scrapbook, notebook, bulletin, circular, form, pamphlet, statement, journal, postcard, letter, telegram, telex, report, notice, message, analysis, comparison, graph, chart, inter-office or intra-office communications, photostat or other copy of any documents, microfilm or other film record, photograph, sound recording on any type of device, punch card, disc or disc pack, tape or other type of memory generally associated with computers and data processing (together with the programming instructions and other written material necessary to use punch card, disc, disc pack, tape or the type of memory) including; (a) every copy of each document which is not an exact duplicate of a document which is produced, (b) every copy which has any writing, figure, notation, annotation, or the like of it, (c) drafts, (d) attachments to or enclosures with any document, and (e) every document referred to in any other document.
4. The term "**FACILITY**" shall mean US Technology Services (UT) located at 380 Allied Industrial Blvd in Macon, Georgia.
5. The term "**GENERATION**" shall mean any act or process which produces hazardous waste as identified or listed in 40 C.F.R. Part 261 or an act which first causes a hazardous waste to become subject to regulation.
6. The term "**HAZARDOUS SUBSTANCE**" means: (a) any substance designated pursuant to Section 311(b)(2)(A) of the Federal Water Pollution Control Act; (b) any element, compound, mixture, solution, or substance designated pursuant to Section 102 of CERCLA; (c) any hazardous waste having the characteristics identified under or listed pursuant to Section 3001 of RCRA (but not including any waste the regulation of which under RCRA has been suspended by Act of Congress); (d) any toxic pollutant listed under Section 307(a) of the Federal Water

Pollution Control Act; (e) any hazardous air pollutant listed under Section 112 of the Clean Air Act; and (f) any imminently hazardous chemical substance or mixture with respect to which the Administrator of the EPA has taken action pursuant to Section 7 of the Toxic Substances Control Act. The term does not include petroleum, including crude oil or any fraction thereof which is not otherwise specifically listed or designated as a hazardous substance under subparagraphs (a) through (f) of this paragraph, and the term does not include natural gas, natural gas liquids, liquefied natural gas, or synthetic gas usable for fuel (or mixtures of natural gas and such synthetic gas). "HAZARDOUS SUBSTANCE" shall include any mixtures of such hazardous substances with any other substances including petroleum products.

7. The term "**HAZARDOUS WASTE**" means a hazardous waste as defined in 40 C.F.R. § 261.3.
8. The term "**IDENTIFY**" means, with respect to a natural person, to set forth the person's name, present or last known business address and business telephone number, present or last known home address and home telephone number, and present or last known job title, position or business.
9. The term "**IDENTIFY**" means, with respect to a corporation, partnership, business trust or other associate of a business entity (including a sole proprietorship), to set forth its full name, address, legal form (e.g., corporation, partnership, etc.), organization, if any, and a brief description of its business.
10. The term "**IDENTIFY**" means, with respect to a document, to provide its customary business description, date, number, if any (invoice or purchase order number), the identity of the author, addressor, addressee and/or recipient, and the substance or the subject matter.
11. The term "**PERSON**" includes, in the plural as well as the singular, any natural person, firm, unincorporated associate partnership, corporation, trust or other entity.
12. The term "**POLLUTANT**" or "**CONTAMINANT**" shall include, but not be limited to, any element, substance, compound or mixture, including disease-causing agents, which after release into the environment and upon exposure, ingestion, inhalation, or assimilation into any organism, either directly from the environment or indirectly by ingestion through food chains, will or may reasonably be anticipated to cause death, disease, behavioral abnormalities, cancer, genetic mutation, physiological malfunctions (including a malfunction in reproduction) or physical deformation in such organisms or their offspring; except that the term "POLLUTANT" or "CONTAMINANT" shall not include petroleum, including crude oil or any fraction thereof which is not otherwise specifically listed or designated as a hazardous substance under subparagraphs (a) through (f) of Definition 5 above, and shall not include natural gas, liquefied natural gas, or synthetic gas of pipeline quality (or mixtures of natural gas and such synthetic gas). "POLLUTANT" or "CONTAMINANT" shall include any mixtures of such pollutant and contaminants with other substances, including petroleum products.
13. The term "**RELEASE**" shall include any spilling, leaking, pumping, pouring, emitting, emptying, discharging, injecting, escaping, leaching, dumping, or disposing into the environment, including the abandonment or discharging of barrels, containers, and other closed receptacles containing any hazardous substance or pollutant or contaminant.

14. The term "**TRANSACTION**" or "**ARRANGEMENT**" shall mean every separate agreement, act, deal, instance or occurrence.
15. The term "**YOU**" or "**RESPONDENT**" shall mean the addressee of this Information Request, the addressee's officers, managers, employees, contractors, trustees, successors, assigns, and agents.

INFORMATION REQUEST

Questions

The EPA Region 4 conducted an inspection at the UT in Macon, Georgia, to determine the facility's compliance status with the RCRA. During the inspection, the EPA was informed that UT receives Spent Plastic Blasting Media from aircraft paint stripping operation at Robins Air Force Base (RAFB). On April 16, 2013, EPA and GAEPD conducted an inspection at RAFB. During that inspection, the inspectors were told that UT receives the Spent Plastic Blasting Media (SPBM) but also the spent paint chips/plastic mixture, heavy pain chips and baghouse dust.

1. Please provide the date in which UT first started receiving the SPBM, spent paint chips/plastic mixture, heavy pain chips and baghouse dust from RAFB.
2. Please provide the volume of SPBM, spent paint chips/plastic mixture, heavy pain chips and baghouse dust from RAFB for the past 5 years.
3. Please provide any analytical testing (i.e., pH, TCLP, VOCs) that your facility has conducted on the SPBM, spent paint chips/plastic mixture, heavy pain chips and baghouse dust from RAFB.
4. Please describe how and what materials UT reuses or recycles the SPBM, spent paint chips/plastic mixture, heavy pain chips and baghouse dust.
5. With regard to the use of the SPBM, spent paint chips/plastic mixture, heavy pain chips and baghouse dust in your system, please provide the following:
 - a. A description of the useful contribution provided by the addition of these materials to your product.
 - b. The utilization of these materials to reduce the amount of chemicals required to be utilized by your facility.
6. Has the UT ever rejected a load of these materials or discontinued a supply source of these materials? If so, what was the basis for such rejection and how were the materials were disposed of?
7. Please provide a narrative, with supporting documentation, outlining if your facility saves money in any form by utilizing the SPBM, spent paint chips/plastic mixture, heavy pain chips and baghouse dust material in the manufacturing of your products.
8. Please provide a narrative, with supporting documentation, outlining how your facility saves money in any form by utilizing SPBM, spent paint chips/plastic mixture, heavy pain chips and baghouse dust.
9. Please provide a narrative outlining how your facility utilizes the SPBM, spent paint chips/plastic mixture, heavy pain chips and baghouse dust at your facility (i.e., outline any steps involved in the process of utilization, outline if the materials must be added at specific rates, etc.).

10. Please provide a narrative outlining how your facility demonstrate that the SPBM, spent paint chips/plastic mixture, heavy pain chips and baghouse dust are a valuable products to be utilized at your facility (i.e., by paying for the material, by paying for the transportation of the materials, utilizing the other chemicals in lieu of needing to purchase an alternative chemical, etc.)
11. If the SPBM, spent paint chips/plastic mixture, heavy pain chips and baghouse has been exported to other countries, please provide a list of countries with the amounts (i.e., manifests or bill of laden) where the material is exported and how the material is been used in those countries.
2. If the SPBM, spent paint chips/plastic mixture, heavy pain chips and baghouse dust has been sold to brokers or other companies in the US, please provide a list, including the company names, contact information (telephone numbers and address) of the broker or other companies that your company provided the material for the past 5-years.

September 16, 2013

United States Environmental Protection Agency Region 4
Attention: Larry Lamberth, Hector M. Danois
Atlanta Federal Center
61 Forsyth Street
Atlanta, Georgia 30303-8960

Subj: RCRA Compliance Evaluation Inspection
U S Technology Services
EPA ID. No. GAR 000 061 838

Gentlemen;

In your letter dated August 26, 2013, and subsequent phone conversation, you expressed concern over whether the pulverized paint residue, and bag house dust represented separate waste streams not included in the spent blast media previously addressed in disclosures to the Georgia EPD.

The Spent Blast Media (SBM) includes the the pulverized paint, comprised of epoxy thermoset plastic, and polyurethane thermoset plastic coatings and bag house dust of the same materials. The only difference in these materials is in their particle size and point of recovery. Material no longer usable due to wear is removed from the system by the screen shakers following recovery from the floor recovery system, and is typically less than 80 mesh. The bag house dust is the same material but recovered from the facility air cleaning system and is typically less than 120 mesh.

All abrasives used are non toxic, and non hazardous before and after use. The inclusion of the paint residue, which may or may not contain toxics in the form of chrome or cadmium pigments is the sole purpose and reason for the recycle program and the reuse of the material as a substitute ingredient in the manufacture of commercial products.

Of the plastic abrasives received, well over half are non hazardous due to the nature of their prior use. Each customer's material is tested for a determination of its toxicity and managed accordingly. Those materials received which test above 5PPM CR, or 1 PPM CD by TCLP are blended for uniformity of density and size and utilized as ingredients in the manufacture of products as you noted. All Robins AFB materials are managed as if they were hazardous, by contract terms.



You asked whether, as part of our request for exemption of the use in block request to the State of Georgia, we had disclosed that the pulverized paint removed by the abrasive was included in the SBM. Consistent with the directives of 40 CFR 261, the material is recycled in its entirety as a substitute ingredient. We scalp it with a very coarse screen for removal of potential trash and blend it for uniformity but do not add or subtract from it as received. The customers, including Robins, recover the material and provide to us in the form we receive it including paint and bag house dust.

You also requested the material submitted to Georgia in our request to Georgia for clarification that block used below grade was exempt from regulation as incidental contact, of a non hazardous product (block), containing a material exempted from regulation by 40 CFR 261. I am enclosing that package submitted by our council James Palmer, prior Director US EPA Region 4, which has reference to the inclusion of the paint at several places.

I hope the information above addresses your concerns. If additional information is required or documentation that the spent material comes out of the production systems as combined media and pulverized paint please let me know. We have recycled spent media from all fifty states for twenty years and it has always been combined except in cases where there is no paint being removed.

Thank you for your interest in our program and your continued support.

Sincerely,

A handwritten signature in black ink, appearing to read "Raymond F. Williams".

Raymond F. Williams
President
Us Technology Corporation

(12) **United States Patent**
Williams

(10) **Patent No.:** **US 7,476,273 B2**
(45) **Date of Patent:** ***Jan. 13, 2009**

(54) **CEMENTITIOUS BLOCK MATERIAL,
UTILIZING SPENT BLASTING ABRASIVE
PARTICLES**

(75) **Inventor:** **Raymond F. Williams, Massillon, OH
(US)**

(73) **Assignee:** **U.S. Technology Corporation, Canton,
OH (US)**

(*) **Notice:** Subject to any disclaimer, the term of this
patent is extended or adjusted under 35
U.S.C. 154(h) by 373 days.

This patent is subject to a terminal dis-
claimer.

(21) **Appl. No.:** **11/166,429**

(22) **Filed:** **Jun. 24, 2005**

(65) **Prior Publication Data**
US 2007/0012219 A1 Jun. 18, 2007

Related U.S. Application Data

(63) **Continuation-in-part of application No. 10/825,733,
filed on Apr. 15, 2004, now Pat. No. 7,438,757.**

(51) **Int. Cl.**
C04B 18/04 (2006.01)

(52) **U.S. Cl.** **106/713; 106/724; 106/823;
588/255; 588/257**

(58) **Field of Classification Search** **106/724,
106/713, 823; 588/255, 257**
See application file for complete search history.

(56) **References Cited**

U.S. PATENT DOCUMENTS

4,058,406 A • 11/1977 Raponi
4,398,960 A • 8/1983 Murray 106/738

4,673,437 A • 6/1987 Gelbman

OTHER PUBLICATIONS

Answer 70 of 165 Chem Abst on STN JP 20000053457 (Feb 22,
2000) Hoshino et al. abstract only.*

Answer 120 of 165 of Chem Abst on STN JP05085797 (Apr. 6, 1993)
Nakane et al. abstract only.*

Answer 14 of 36 of Chem Abst on STN "Reuse of abrasive blast
media from ship building industry into concrete", White et al., Haz-
ardous and Industrial Wastes (1998), 30th, 257-266.*

Answer 20 of 36 of Chem Abst on STN "Recycling of spent abrasive
media in non-structural concrete", Webster et al., Jnl of Environ-
mental Engineering, (1996), 122(9), 840-849.*

Answer 29 of 36 of Chem Abst on STN JP05132343 (May 28, 1993),
Yoshii et al. abstract only.*

Answer 38 of 36 of Chem Abst on STN JP 05139807 (Jun 8, 1993)
Yoshii et al. abstract only.*

* cited by examiner

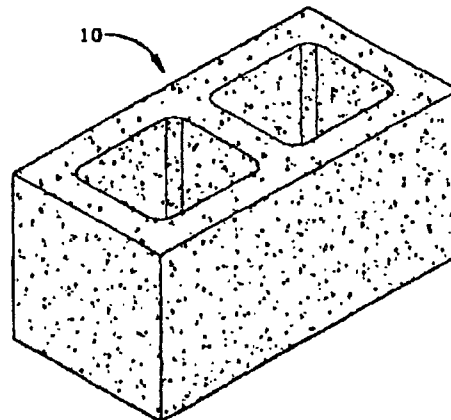
Primary Examiner—Paul Marcantoni

(74) *Attorney, Agent, or Firm*—Sand & Scholt

(57) **ABSTRACT**

An accelerated-curing concrete masonry unit (CMU) mixture
includes aggregate material, hydraulic cement and spent
blasting abrasive particles, and may also include paint residue
particles. The abrasive particles or abrasive and paint
particles combined preferably make up at least 5.0% of the
mixture by volume. Preferably, the hydraulic cement is Port-
land cement and the abrasive or combined particles make up
about 10.0% to 17.0% of the mixture by volume. The abrasive
particles typically have a fineness modulus ranging from 0.6
to 1.5 and more preferably from 0.75 to 1.2. Plastic particles
may make up some or all of the abrasive particles. CMUs
formed with this mixture are substantially more water repel-
lent than standard CMUs and have a water absorption often no
greater than 9.0 pounds per cubic foot. Preferred CMUs have
an average net compressive strength of over 2,500 psi while
levels of 3,000 psi or 3,500 psi are not uncommon.

40 Claims, 1 Drawing Sheet





US007438757B2

(12) **United States Patent**
Williams et al.

(10) Patent No.: **US 7,438,757 B2**
(45) Date of Patent: ***Oct. 21, 2008**

(54) **CONCRETE BLOCK AND METHOD OF MAKING SAME**

(75) Inventors: **Raymond F. Williams, Massillon, OH (US); Christopher C. McCoy, Massillon, OH (US)**

(73) Assignee: **U.S. Technology Corporation, Canton, OH (US)**

(*) Notice: Subject to any disclaimer, the term of this patent is extended or adjusted under 35 U.S.C. 154(b) by 683 days.

This patent is subject to a terminal disclaimer.

(21) Appl. No.: **10/825,733**

(22) Filed: **Apr. 15, 2004**

(65) **Prior Publication Data**
US 2005/0247002 A1 Nov. 10, 2005

(51) Int. Cl.
C04B 16/00 (2006.01)
C04B 16/04 (2006.01)

(52) U.S. Cl. **106/724; 106/727; 106/823; 524/4**

(58) Field of Classification Search **106/724, 106/727, 823; 524/4**
See application file for complete search history.

(56) **References Cited**

U.S. PATENT DOCUMENTS

1,633,790 A * 6/1927 Lindstrom
4,019,919 A * 4/1977 DeSalvo
4,058,406 A * 11/1977 Raponi 524/8
4,398,960 A * 8/1983 Murray
4,427,818 A 1/1984 Prusinski
2003/0084822 A1 * 5/2003 Barrow 106/724

OTHER PUBLICATIONS

Answer 20 of 36 Chem Abstr on STN ☐ "Recycling of spent abrasive media in non-structural concrete", Webster et al., Journal of Environ. Engineering (1996), 122(9), p. 840-849. ☐ *

* cited by examiner

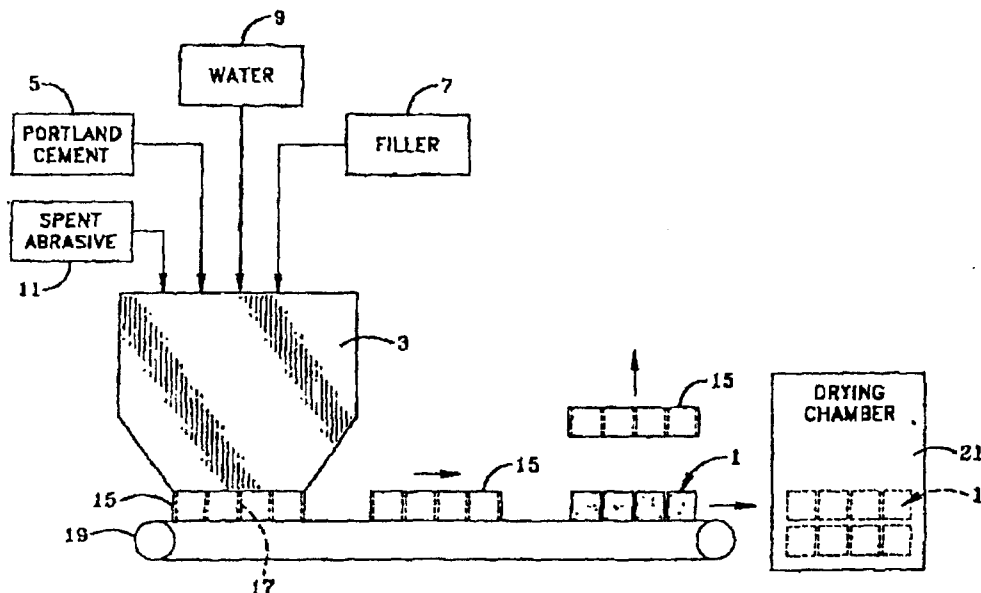
Primary Examiner—Paul Marcantoni

(74) Attorney, Agent, or Firm—Sand & Sebolt

(57) **ABSTRACT**

A concrete building block containing Portland cement, a filler, water, and a quantity of particularly sized plastic particles, such as spent abrasive particles of a thermoset plastic. The associated method of producing such blocks eliminates the need of curing the blocks in a heated humidity controlled environment in order for the blocks to attain the required water content for hydration of the cement.

11 Claims, 1 Drawing Sheet





December 5, 2007

U.S. Department of Justice
United States Attorney's Office
Southern District of Mississippi
188 East Capitol St.
Ste. 500
Jackson, MS 39201
Phone: 16666250327
Fax: (601) 973-2826

Ray Williams, President
United States Technology, Inc.
c/o Laura Batrus
150 Smokerise Drive
Wadsworth, OH 44281

Re: United States v. Dennie Eugene Pridemore
Case Number 2002R00623 and Court Docket Number: 5:06CR43DCBLRA

Dear Ray Williams:

Your name was forwarded to our office by law enforcement as a victim (or potential victim) in the above mentioned criminal case. We will continue to provide you with updated scheduling and event information as the case proceeds through the criminal justice system. The enclosed information provides instructions for accessing the Victim Notification System (VNS) Call Center and VNS web site.

Charges have been filed against defendant(s) Dennie Eugene Pridemore. The lead prosecutor for this case is Jeremy Korzenik. The main charge is categorized as Environmental Crime. The indictment has been downloaded on the website for your information.

The Crime Victims' Rights Act gives victims of criminal offenses in Federal court certain rights, including: (1) The right to be reasonably protected from the accused; (2) The right to reasonable, accurate, and timely notice of any public court proceeding, involving the crime, or of any release or escape of the accused; (3) The right not to be excluded from any such public court proceeding, unless the court, after receiving clear and convincing evidence, determines that testimony by the victim would be materially altered if the victim heard other testimony at that proceeding; (4) The right to be reasonably heard at any public proceeding in the district court involving release, plea, or sentencing; (5) The reasonable right to confer with the attorney for the Government in the case; (6) The right to full and timely restitution as provided in law; (7) The right to proceedings free from unreasonable delay; and (8) The right to be treated with fairness and with respect for the victim's dignity and privacy.

We will make our best efforts to ensure you are provided the rights described above. It is important to keep in mind that the defendant(s) are presumed innocent until proven guilty and that presumption requires both the Court and our office to take certain steps to ensure that justice is served. While our office cannot act as your attorney or provide you with legal advice, you can seek the advice of an attorney with respect to these rights or other related legal matters.

Defendant(s), Dennie Eugene Pridemore, has been released from federal custody. The defendant was released on a \$100,000 bond pending sentencing.

On November 15, 2007, defendant Dennie Eugene Pridemore, pled guilty to the charges listed below. Any remaining counts will be disposed of at the time of sentencing. As a result of the guilty plea, there will be no trial involving this defendant.

<u>Number of Charges</u>	<u>Charge</u>	<u>Disposition</u>
2	Fraud/false statements generally	Guilty
4	Hazardous waste management - Federal enforcement	Guilty

It is helpful for the Court to know the impact of this crime on its victims. In an effort to provide this information to the Court, we are enclosing a Victim Impact Statement. If you choose to complete a statement, please forward it to: United States Attorneys Office, Southern District of Mississippi, 188 East Capitol St., Ste. 500, Jackson, MS 39201.

This is one way the Court can hear your concerns as they relate to the crime. A United States Probation Officer may also contact you in an effort to obtain additional victim impact information. Victim impact information is generally not public information; however, under criminal law and procedures, all information contained in your questionnaire will be disclosed to the defendant and his attorney. PLEASE RETURN THE AFFIDAVIT AND AN IMPACT STATEMENT BY JANUARY 4, 2008.

The sentencing hearing for defendant(s), Dennie Eugene Pridemore, has been set for February 7, 2008, 10:30 AM at Natchez, MS before Judge David C. Bramlette. You are welcome to attend this proceeding; however, unless you have received a subpoena, your attendance is not required by the Court. If you plan on attending, please check with the VNS Call Center to verify the sentencing date and time. Should you wish to speak at the sentencing or want to check for the most current information on the date/time of this event please call our office a day or two before the scheduled hearing.

A United States Probation Officer prepares a report for the Court and may contact you to discuss the impact the crime had on you financially, physically, and/or emotionally. If you are contacted, please make every effort to provide accurate and detailed information.

The Victim Notification System (VNS) is designed to provide you with information regarding the case as it proceeds through the criminal justice system. You may obtain current information about this case on the VNS web site at WWW.Notify.USDOJ.GOV or from the VNS Call Center at 1-866-DOJ-4YOU (1-866-365-4968) (TDD/TTY: 1-866-228-4619) (International: 1-502-213-2767). In addition, you may use the Call Center or Internet to update your contact information and/or change your decision about participation in the notification program. If you update your contact information to include a current email address, VNS will send information to that email address. In order to continue to receive notifications, it is your responsibility to keep your contact information current.

You will use your Victim Identification Number (VIN) '1940871' and Personal Identification Number (PIN) '8054' anytime you contact the Call Center and the first time you log on to the VNS web site. In addition, the first time you access the VNS Internet site, you will be prompted to enter your last name (or business name) as currently contained in VNS. The name you should enter is United States Technology, Inc..

Remember, VNS is an automated system and cannot answer questions. If you have other questions which involve this matter, please contact this office at the number listed above.

Sincerely,

STAN HARRIS, Acting
United States Attorney

Paulette Womack

Paulette Womack
LECC/Victim Witness Coordinator

Georgia Department of Natural Resources

REPLY TO:

**HAZARDOUS WASTE MANAGEMENT BRANCH
GENERATOR COMPLIANCE PROGRAM
4244 INTERNATIONAL PARKWAY
SUITE 104
ATLANTA, GEORGIA 30354
(404)362-2684**

205 Butler Street, S.E., Floyd Towers East, Atlanta, Georgia 30334

Joe D. Tanner, Commissioner

Harold P. Reich, Director

Environmental Protection Division

February 22, 1993

Mr. Raymond F. Williams
President
U S Technology Corporation
220 7th Street S.E.
Canton, Ohio 44702

SUBJECT: Plastic Abrasive Recycling Program

Dear Mr. Williams:

The Hazardous Waste Management Branch has reviewed your letter dated December 15, 1992, and supporting documentation detailing your plastic abrasive recycling program. You have requested regulatory interpretation on the plastic abrasive recycling program.

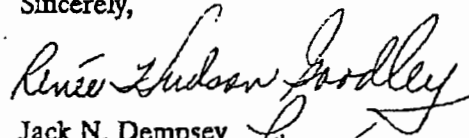
Based upon the information submitted, this office is unable to determine if the plastic abrasive recycling program meets the requirements set forth by the Georgia Rules for Hazardous Waste Management and the Code of Federal Regulations, Title 40, adopted by reference. Therefore, this office is requesting additional information on the product, abrasive process, and the known market before a regulatory interpretation can be made. The following information is necessary:

1. Detailed schematic drawing of the plastic abrasive application process and the recovery system;
2. Complete and detailed chemical analysis of the plastic abrasive used in the process;
3. Complete and detailed chemical analysis of the product without the contaminated media as a substitute ingredient. This information should also include all physical properties;
4. Written explanation of the beneficial factors the hazardous waste constituents contribute to the composition of the product; and
5. Documentation that demonstrates a known market or disposition of the product.

Mr. Raymond Williams
U S Technology Corporation
February 22, 1993
Page 2

Should any question arise, please contact Donald N. Montgomery at (404) 362-2684.

Sincerely,

A handwritten signature in cursive script, appearing to read "Renée Hudson Goodley".

Jack N. Dempsey
Unit Coordinator
Generator Compliance Program

JND/DNM/klc

cc: Jennifer R. Kaduck
John D. Taylor, Jr.
Renée Hudson Goodley

File: Regulatory Interpretation

Georgia Department of Natural Resources

205 Butler Street, S.E., Suite 1066, Atlanta, Georgia 30334

Joe D. Tanner, Commissioner

Harold F. Rebeis, Director

Environmental Protection Division
404/657-8831 FAX: 404/657-7379

February 25, 1994

Mr. Raymond F. Williams
President
U S Technology Corporation
220 7th Street S.E.
Canton, Ohio 44702

SUBJECT: Plastic Abrasive Recycling Program

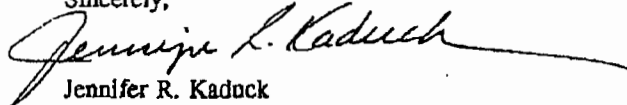
Dear Mr. Williams:

The Hazardous Waste Management Branch has reviewed your letter of November 10, 1993 and supporting documentation detailing your recycling program for spent plastic abrasive material generated from aircraft paint removal operations.

Provided your program is as described in the supporting documents, we have concluded the spent plastic abrasive material appears to be a legitimate and effective substitute for calcium carbonate in the manufacture of bathroom fixtures. Therefore, it is exempt from Georgia's Rules for Hazardous Waste Management under 40 CFR 261.2(c)(1)(i).

Please be advised that if the spent plastic media is handled in a manner inconsistent with the exemption or a change in the Rules eliminates the exemption, the spent plastic abrasive material would be subject to Georgia's Rules for Hazardous Waste Management. If you have any further questions, please contact Renée Hudson Goodley at (404) 657-8831.

Sincerely,



Jennifer R. Kaduck

Chief

Hazardous Waste Management Branch

JRK\DNM\klw

c: John D. Taylor, Jr.
Renée Hudson Goodley
Jim Ussery
Bill Mundy

File: Regulatory Interpretation

RADONM\USTECHN4.LTR

Lanica C. Barrett, Commissioner
Environmental Protection Division
Hercia F. Renels, Director
404/858-2833

File: R AFB(R)
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UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

REGION 4

ATLANTA FEDERAL CENTER
100 ALABAMA STREET, S.W.
ATLANTA, GEORGIA 30303-3104

APR 09 1997

4WD-RCRA

CERTIFIED MAIL
RETURN RECEIPT REQUESTED

Mr. Ray Pollard
Plant Manager
Poly-Pacific International Inc.
8918-18 Street
Edmonton, AB, Canada, T6P 1K6

SUBJ: Poly-Pacific International Inc. - Multicut® Plastic Media
Blasting (PMB) Recycling Program

Dear Mr. Pollard:

The purpose of this letter is to respond to your request concerning the subject referenced above. In a letter, dated March 31, 1997, you requested confirmation by the United States Environmental Protection Agency (EPA), Region 4, that spent Multicut® plastic media blasting (PMB) materials as used in the recycling program of Poly-Pacific International Inc. are exempt from regulation as solid and hazardous wastes under the Resource Conservation and Recovery Act (RCRA). As you stated in your letter, the Multicut® PMB materials (acrylic polymers and urea (Amino Thermoset) polymers) become spent after being used to remove paint and coatings from aircraft and aircraft components, thereby avoiding the solvents which were formerly used for this task. You also stated your position that the spent Multicut® PMB materials qualify for the exclusion in 40 CFR § 261.2(e)(1)(i) when used in the recycling program of Poly-Pacific International Inc. Those secondary materials that are recycled by being used or reused as ingredients in an industrial process to make a product, provided the materials are not being reclaimed, are excluded from classification as solid wastes by § 261.2(e)(1)(i). The exclusion does not apply if the secondary material is managed in one or more of the following ways in order to recycle it: (1) burning for energy recovery, (2) use to produce a fuel, (3) use as an ingredient in fuels, (4) use in a manner constituting disposal, (5) use to produce a product that is applied to the land, or (6) speculative accumulation. (Please see 40 CFR § 261.2(e)(2).)

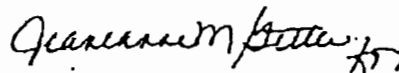
EPA, Region 4, has reviewed the information, submitted with your letter, on chemical analysis of the Multicut® PMB materials before use, Material Safety Data Sheets, and the agreement between Poly-Pacific International Inc. and Plastic Plastic Inc., Ontario, Canada, to use the spent Multicut® PMB materials to

manufacture agricultural plastic fence posts. EPA, Region 4, also reviewed a letter from its files, dated January 9, 1996, which responded to a similar request about a similar spent material. This letter, which you transmitted by facsimile to Shannon Maher, of my staff, indicated that paint chips in the spent material served as pigments and to provide opacity in the final product. During a telephone conversation with Judy Sophianopoulos, of my staff, on April 3, 1997, you stated that the paint chips in your spent PMB materials serve a similar function. Copies of these documents are enclosed. Based on the documents reviewed and the telephone conversations on March 20 and April 4, 1997, EPA, Region 4, confirms that spent Multicut® plastic media blasting (PMB) materials as used in the recycling program of Poly-Pacific International Inc. do qualify for the exemption from RCRA regulation provided in 40 CFR Section 261.2(e)(1)(i).

Please be advised that State requirements for these materials may be more stringent than those of EPA. Therefore, each State environmental office should be consulted before managing these secondary materials in that State. Enclosed is a list of names, addresses, and phone numbers for State environmental offices in Region 4.

Please contact Judy Sophianopoulos at (404) 562-8604, if you have questions or would like additional information concerning EPA's determination in this matter.

Sincerely yours,



Jewell Grubbs, Chief
Enforcement and
Compliance Branch
Waste Management Division

Enclosures (5)

cc: John A. Poole, Alabama Department of Environmental
Management
Satish Kastury, Florida Department of Environmental
Protection
Jennifer R. Kaduck, Georgia Environmental Protection
Division
Robert H. Daniell, Kentucky Department for Environmental
Protection
Jerry Banks, Mississippi Department of Environmental Quality
William L. Meyer, North Carolina Department of Environment,
Health, and Natural Resources
Hartsill Truesdale, South Carolina Department of Health and
Environmental Control
Tom Tiesler, Tennessee Department of Environment and



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

REGION 4
ATLANTA FEDERAL CENTER
100 ALABAMA STREET, S.W.
ATLANTA, GEORGIA 30303-3104

APR 09 1997

4WD-RCRA

CERTIFIED MAIL
RETURN RECEIPT REQUESTED

Mr. Ray Pollard
Plant Manager
Poly-Pacific International Inc.
8918-18 Street
Edmonton, AB, Canada, T6P 1K6

SUBJ: Poly-Pacific International Inc. - Multicut® Plastic Media
Blasting (PMB) Recycling Program

Dear Mr. Pollard:

The purpose of this letter is to respond to your request concerning the subject referenced above. In a letter, dated March 31, 1997, you requested confirmation by the United States Environmental Protection Agency (EPA), Region 4, that spent Multicut® plastic media blasting (PMB) materials as used in the recycling program of Poly-Pacific International Inc. are exempt from regulation as solid and hazardous wastes under the Resource Conservation and Recovery Act (RCRA). As you stated in your letter, the Multicut® PMB materials (acrylic polymers and urea (Amino Thermoset) polymers) become spent after being used to remove paint and coatings from aircraft and aircraft components, thereby avoiding the solvents which were formerly used for this task. You also stated your position that the spent Multicut® PMB materials qualify for the exclusion in 40 CFR § 261.2(e)(1)(i) when used in the recycling program of Poly-Pacific International Inc. Those secondary materials that are recycled by being used or reused as ingredients in an industrial process to make a product, provided the materials are not being reclaimed, are excluded from classification as solid wastes by § 261.2(e)(1)(i). The exclusion does not apply if the secondary material is managed in one or more of the following ways in order to recycle it: (1) burning for energy recovery, (2) use to produce a fuel, (3) use as an ingredient in fuels, (4) use in a manner constituting disposal, (5) use to produce a product that is applied to the land, or (6) speculative accumulation. (Please see 40 CFR § 261.2(e)(2).)

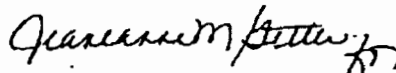
EPA, Region 4, has reviewed the information, submitted with your letter, on chemical analysis of the Multicut® PMB materials before use, Material Safety Data Sheets, and the agreement between Poly-Pacific International Inc. and Plastic Plastic Inc., Ontario, Canada, to use the spent Multicut® PMB materials to

manufacture agricultural plastic fence posts. EPA, Region 4, also reviewed a letter from its files, dated January 9, 1996, which responded to a similar request about a similar spent material. This letter, which you transmitted by facsimile to Shannon Maher, of my staff, indicated that paint chips in the spent material served as pigments and to provide opacity in the final product. During a telephone conversation with Judy Sophianopoulos, of my staff, on April 3, 1997, you stated that the paint chips in your spent PMB materials serve a similar function. Copies of these documents are enclosed. Based on the documents reviewed and the telephone conversations on March 20 and April 4, 1997, EPA, Region 4, confirms that spent Multicut® plastic media blasting (PMB) materials as used in the recycling program of Poly-Pacific International Inc. do qualify for the exemption from RCRA regulation provided in 40 CFR Section 261.2(e)(1)(i).

Please be advised that State requirements for these materials may be more stringent than those of EPA. Therefore, each State environmental office should be consulted before managing these secondary materials in that State. Enclosed is a list of names, addresses, and phone numbers for State environmental offices in Region 4.

Please contact Judy Sophianopoulos at (404) 562-8604, if you have questions or would like additional information concerning EPA's determination in this matter.

Sincerely yours,



Jewell Grubbs, Chief
Enforcement and
Compliance Branch
Waste Management Division

Enclosures (5)

cc: John A. Poole, Alabama Department of Environmental
Management
Satish Kastury, Florida Department of Environmental
Protection
Jennifer R. Kaduck, Georgia Environmental Protection
Division
Robert H. Daniell, Kentucky Department for Environmental
Protection
Jerry Banks, Mississippi Department of Environmental Quality
William L. Meyer, North Carolina Department of Environment,
Health, and Natural Resources
Hartsill Truesdale, South Carolina Department of Health and
Environmental Control
Tom Tiesler, Tennessee Department of Environment and



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

REGION 4

345 COURTLAND STREET, N.E.
ATLANTA, GEORGIA 30365

JAN 09 1996

4WD-RCRA

CERTIFIED MAIL
RETURN RECEIPT REQUESTED

Mr. G. Alan Perkins
Williams & Anderson
Twenty-Second Floor
111 Center Street
Little Rock, Arkansas 72201

SUBJ: Composite Leasing Corporation (Composite) Plastic Media
Blasting (PMB) Recycling Program

Dear Mr. Perkins:

The purpose of this letter is to respond to your letter on behalf of Composite, dated October 5, 1995, requesting confirmation of the regulatory exemption of recycled acrylic plastic dust resulting from the PMB of paints and coatings from aircraft and aircraft components. It is claimed, in your letter, that the PMB dust is used as an ingredient in an industrial process to make a product, without reclamation. As such, it should not be considered a solid waste. And, therefore, it is not subject to RCRA regulations.

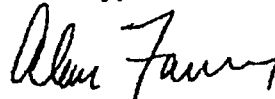
EPA reviewed the information provided and concluded that the presence of metals (chromium and cadmium), in the PMB dust, warranted further examination. It is stated in your letter that: *PMB dust product which consists of 96 to 99 percent acrylic plastic, sometimes exhibits the toxicity characteristic for chromium and/or cadmium due to the inclusion of minute paint chips.* EPA, by telephone, communicated its concern regarding this matter. Specifically, EPA requested additional supporting documentation and an explanation on the benefits provided by the paint chip impurities to the finished recycled product.

In your reply letter to EPA's request, dated November 29, 1995, you stated that the chromium and cadmium are contained in the pigments in the paint chips. These chips give the dust product a uniformly grayish color and opaque condition. Both these characteristics are important to the appearance of the recycled finished product. In order to achieve the color and opaqueness desired, without the benefit of PMB dust, the recycler must add pigments or pigmented material. The pigments added contain levels of chromium, cadmium, and/or other heavy metals, in similar or greater amounts than the PMB dust already contains.

After reviewing your letters and supporting documentation, EPA has determined that the PMB recycling process meets the requirements set forth in 40 CFR § 261.2(e)(1)(i). Therefore, within the management practices described in your documentation, the PMB dust is not considered a solid waste and is not subject to RCRA Regulations.

If you have any questions, please contact Mr. Carlos E. Merizalde, of my staff, at (404) 347-7603, ext. 6401.

Sincerely,

A handwritten signature in dark ink, appearing to read "Alan Farmer", written in a cursive style.

G. Alan Farmer
Chief, RCRA Branch
Waste Management Division

cc: Mr. Jerry B. Banks, MDEQ Director Hazardous Waste Division

US TECHNOLOGY

Georgia Department of Natural Resources

205 Butler Street, S.E., Suite 1162, Atlanta, Georgia 30334

Louisa C. Barrett, Commissioner
Environmental Protection Division

Harold F. Renelt, Director
404/656-2833

January 30, 1996

CERTIFIED MAIL
RETURN RECEIPT REQUESTED

Dave Bury
WR-ALC/EMR
216 Ocmulgee Court
Robins AFB, Georgia 31098-1040

RE: Recycling Spent Blast Media

Dear Mr Bury:

The Georgia Environmental Protection Division (EPD) has reviewed your October 30, 1995 letter regarding the spent plastic blast media (PBM) containing chromium and cadmium generated from aircraft paint removal operations. Based on the documentation provided by US Technology Corporation, Georgia EPD concurs that the spent PBM meets the requirements under 40 CFR 261.2(f) as an effective substitute for calcium carbonate in the manufacture of bathroom fixtures.

Please be advised that if the spent PBM is handled in a manner inconsistent with the exemption or a change in the Rules eliminates the exemption, the spent PBM would be subject to Georgia's Rules for Hazardous Waste Management. If you have any questions regarding this matter, please contact Danny Heater at 404-656-2833.

Sincerely,


Jim Ussery
Program Manager
Hazardous Waste Management Branch

File: RAFB(R)
c:\mail\rafb\rafb\pbm\exp1295



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

REGION 4
ATLANTA FEDERAL CENTER
61 FORSYTH STREET
ATLANTA, GEORGIA 30303-8980

MAR 02 2001

4WD-RCRA

CERTIFIED MAIL
RETURN RECEIPT REQUESTED

Mr. Raymond F. Williams
President
US Technology Corporation
220 Seventh Street, S.E.
Canton, Ohio 44702

SUBJ: Poly-Pacific International Inc. Recycling Program

Dear Mr. Williams:

The purpose of this letter is to provide you with an interim response to your letter of February 15, 2001, in which you make three requests of the United States Environmental Protection Agency (EPA), Region 4. EPA understands and appreciates your concerns and desire to prevent harm to human health and the environment from the recycling of hazardous materials. Specifically, you have expressed concerns and shared information about the recycling program of Poly-Pacific International Inc., of Canada (PPII).

EPA has reviewed information received from you and others, and is awaiting final results of independent analyses, in order to determine whether the opinion stated in the letter, dated April 9, 1997, is correct. As you know, states have the authority to establish more stringent requirements than those of EPA, and the April 9, 1997 letter makes it clear that PPII should contact the environmental office in each state prior to marketing the product of the recycling program in that state. All of the States in Region 4 are authorized to implement the recycling regulations in 40 C.F.R. Parts 260 and 261, including decisions on what is excluded from the definition of solid waste.

Your first request was "that Region 4 E.P.A. immediately notify Poly Pacific International Inc. that the April 4, 1997 letter cannot be used as an approval by Region 4 because it was not based on a full description of the process."

EPA has notified PPII that its process is being studied, because various people had expressed concerns and asked EPA to take another look at the recycling program. EPA must have final results, independently obtained, before making a final decision on whether to change its position on the PPII recycling program. Also, as stated above, EPA's position is not binding on the states.

Internet Address (URL) • <http://www.epa.gov>

Recycled/Recyclable • Printed with Vegetable Oil Based Inks on Recycled Paper (Minimum 30% Postconsumer)

Your second request was "that Region 4 E.P.A. determine that heavy metals and/or pesticides incorporated into fence posts are toxics along for the ride."

EPA, Region 4 agreed with the requesting companies, in April 1996 and April 1997, that the paint chips, containing heavy metals, in spent plastic blasting media performed the useful function of providing pigmentation in the final product. Final results of an independent study of the pesticide issue should be available this month.

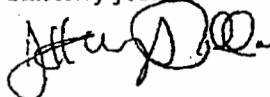
Your third request was "that Region 4 E.P.A. determine that fence post made to be permanently embedded below ground is 'application against the land in a manner constituting disposal' consistent with the determinations of Region 8 and 9."

EPA, Region 4, continues to believe that use of fence posts made from secondary materials is not use constituting disposal, because, unlike fertilizers and road-bed materials, there is only incidental land placement. It is not uncommon to have differing interpretations of RCRA regulations, and in this instance, the Regions and states appear to be split about equally in classifying this recycling process as use constituting disposal. Region 4 respects the different opinions, and that is one reason for obtaining independent study results.

To summarize, EPA, Region 4 appreciates your concerns. Everything necessary to protect human health and the environment is being done and will continue to be done.

Please contact Judy Sophianopoulos at (404) 562-8604, if you have questions or would like additional information.

Sincerely yours,



Jeffrey T. Pallas, Chief
South RCRA Enforcement and Compliance
Section
RCRA Enforcement and Compliance Branch



STATE OF MISSISSIPPI
DAVID RONALD MUSGROVE, GOVERNOR
MISSISSIPPI DEPARTMENT OF ENVIRONMENTAL QUALITY
CHARLES H. CHISOLM, EXECUTIVE DIRECTOR

June 18, 2001

Raymond F. Williams, President
US Technology Corporation
220 Seventh Street, S.E.
Canton, Ohio 44702

Dear Mr. Williams:

Re: Request for regulatory determination

This is a response to your request for regulatory applicability determination on the use of spent plastic abrasives for the manufacture of various products. A letter of approval had previously been sent to you on April 14, 1992.

According to the information submitted, the source of the spent abrasives is mainly from commercial and the U.S. military's operations of pressure blasting aircraft for paint removal. The abrasives contain plastic and other blast media, such as glass, aluminum oxide, garnet, Starblast and copper or iron slag, as well as paint residue, which may contain chromium, lead, and cadmium. This material is used as filler and/or colorant in the finished products. The products are manufactured using a polymer matrix, the spent abrasives, and other virgin products as needed. There is reportedly no reclamation of the spent abrasives prior to their being introduced to the manufacturing process.

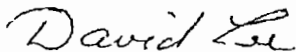
It appears that the same hazardous waste regulatory exemption applies today as in 1992, namely the exemption in Mississippi Hazardous Waste Regulations (MHWMR) 261.2 (e)(1). This exemption is applicable as long as the material is not reclaimed prior to being used in the process. Simple screening to segregate the material based on particle size or remove foreign materials is not considered reclamation. Provided the criteria of this exemption are met, the spent abrasives are not considered solid waste, and therefore are not hazardous waste.

1 of 2

Any use of the spent abrasives must adhere to the requirements of speculative accumulation, as stated in MHWMR 261.1(c)(8) and 261.2(c)(4). Any company using the abrasives in Mississippi must keep documentation to demonstrate that the materials are not being accumulated speculatively (i.e.-during a calendar year, using at least 75% by weight or volume of the material accumulated at the beginning of the calendar year). Additionally, since the spent abrasives contain hazardous constituents, they may not be stored in the open where they could be subject to being contained in stormwater runoff. Storage should be in drums, tanks, bins, silos, enclosed buildings, or equivalent enclosures.

I hope this response answers your questions about the applicability of the MHWMR to this material. If you have further questions, feel free to contact me.

Sincerely



David E. Lee, P.E., Chief
Timber Branch, Compliance Division

cc: Jimmy Palmer; Butler, Snow, O'Mara, Stevens, & Cannada, PLLC



STATE OF MISSISSIPPI
DAVID RONALD MUSGROVE, GOVERNOR
MISSISSIPPI DEPARTMENT OF ENVIRONMENTAL QUALITY
CHARLES H. CHISOLM, EXECUTIVE DIRECTOR

December 20, 2001

Gene Pridemore
Hydromex, Inc.
P. O. Box 1514
Yazoo City, MS 39194

Dear Mr. Pridemore:

Re: Regulatory status of Hydromex products

This is a response to your inquiry concerning the regulatory status of Hydromex products that are placed on the ground for their intended use. In my letter to Ray Williams, dated June 18, 2001, I explained the exemption from the hazardous waste regulations for materials that are used in an industrial process to make a product. This letter did not address the issue of placing the manufactured products on the ground.

Recently there have been varying interpretations of whether products made from spent materials may be placed on the land. The applicable section of the Mississippi Hazardous Waste Management Regulations is 261.2(e)(2)(i). This text states that materials that are applied to the land may be solid waste (and therefore possibly hazardous waste); even if the use or reuse involves recycling. The term 'applied to the land' has had varying interpretations by EPA and the states. Some sources have interpreted this section of the regulations to mean that any produced material that contacts the ground in any manner falls under the scope of the rules. EPA Region IV takes the position that placement on the ground of certain manufactured products containing spent materials that may be hazardous is 'incidental' contact with the ground and not covered under the section referenced above. This interpretation appears to apply to products that have entrained the hazardous constituents in a matrix that is unlikely to leach into the surrounding soils in significant concentrations. This would be the case with the Hydromex products, since solidification with cement has long been recognized as an effective method of trapping constituents such as metals and greatly reducing their motility. This agency recognizes the Region IV interpretation of 'incidental' placement of such products, provided the finished products do not present a hazard to human health or the environment, as determined on a case-by-case basis. This determination would typically prohibit the use of spent materials containing highly toxic constituents that could be transferred to users of the product through skin absorption or inhalation. This agency would also be unlikely to approve uses of spent hazardous materials to make a product that is intended to be abraded into small particle size as it is used, which could expose users or the environment to the included hazardous constituents.

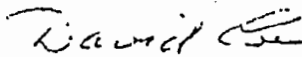
You stated that the spent materials you accept are normally non-hazardous per the TCLP test. If this is the case, the regulatory applicability issue is moot. The Mississippi Solid Waste Management Regulations do not address placement of manufactured products on the ground for their intended use. If you did accept some abrasives that failed the TCLP test and would be considered hazardous waste if disposed, the exemption in 261.2(e)(1)(i) would still be applicable, provided no changes were made to the material prior to use that could be considered reclamation under the regulations.

In summary, the Hydromex products, such as the levee mats, culverts, and other products that would be placed on or in the ground, are exempt from regulatory requirements of this agency, provided that:

- The spent abrasives used are non-hazardous, or
- The spent abrasives, if hazardous per the TCLP test, are used to make the finished products without first being reclaimed (excluding highly toxic and/or mobile constituents, as discussed in the second paragraph of this letter).

If you have further questions on this issue, feel free to contact me at 601.961.5377.

Sincerely



David E. Lee, P.E., Chief
Timber Branch, Compliance Division

TCLP Extraction Worksheet

Digestion Set Number: 14-043

TCLP Extraction Date: 6-11-14

Scientist(s): MP LS TP

Bench #	62151	62153	62154	62155	62156	
---------	-------	-------	-------	-------	-------	--

Preliminary Evaluations

% Solids	100	100	100	100	100	
Particle Reduction?	No	No	No	No	No	
Subsample Weight (g)	5.01	5.06	5.00	5.01	5.02	
Initial pH	12	12	11.5	11.5	11.5	
pH after HCL & Heat	10	—	—	—	—	
Extraction Fluid	2	2	2	2	2	

Tumbling Process

Sample Weight (g)	100.06	100.06	100.05	100.03	100.01	
Ext. Fluid Weight (g)	2001.20	2001.20	2001.00	2000.60	2000.20	
Start Time	1405	1405	1405	1405	1405	
Vent?	yes	yes	yes	yes	yes	
End Time	0905	0905	0905	0905	0905	
Total Hours	19	19	19	19	19	

Filtration

Extract pH	6.5	7	7	6	6	
Volume Filtered (ml)	150	50	50	50	50	
Preserved?	No	No	No	No	No	
Date Digested	6-12-14	6-12-14	6-12-14	6-12-14	6-12-14	

Comments TCLP

Metals Digestion Worksheet

Digestion Set Number 14-043

Date Digested 6-12-14

Scientist MP LS TP

Sample Type: Water ☐ Sediment ☐ Fish ☐ Other ☐

Digestion Method 200.2 3050 245.1 Other

Bench# / Analysis

02151	Na	Mg	Al	K	Cr	Mn	Fe	Co	Ni	Cu	Zn	As	Se	Ag	Cd	Ba	Hg	Pb	Other
62151ms	Na	Mg	Al	K	Cr	Mn	Fe	Co	Ni	Cu	Zn	As	Se	Ag	Cd	Ba	Hg	Pb	Other
62151MSD	Na	Mg	Al	K	Cr	Mn	Fe	Co	Ni	Cu	Zn	As	Se	Ag	Cd	Ba	Hg	Pb	Other
62153	Na	Mg	Al	K	Cr	Mn	Fe	Co	Ni	Cu	Zn	As	Se	Ag	Cd	Ba	Hg	Pb	Other
62154	Na	Mg	Al	K	Cr	Mn	Fe	Co	Ni	Cu	Zn	As	Se	Ag	Cd	Ba	Hg	Pb	Other
62155	Na	Mg	Al	K	Cr	Mn	Fe	Co	Ni	Cu	Zn	As	Se	Ag	Cd	Ba	Hg	Pb	Other
62156	Na	Mg	Al	K	Cr	Mn	Fe	Co	Ni	Cu	Zn	As	Se	Ag	Cd	Ba	Hg	Pb	Other
Blank	Na	Mg	Al	K	Cr	Mn	Fe	Co	Ni	Cu	Zn	As	Se	Ag	Cd	Ba	Hg	Pb	Other
	Na	Mg	Al	K	Cr	Mn	Fe	Co	Ni	Cu	Zn	As	Se	Ag	Cd	Ba	Hg	Pb	Other
	Na	Mg	Al	K	Cr	Mn	Fe	Co	Ni	Cu	Zn	As	Se	Ag	Cd	Ba	Hg	Pb	Other

Volume

Bench #	62151	62151ms	62151MSD	62153	62154	62155	62156	Blank		
Initial Volume: g(ml)	50	50	50	50	50	50	50	50		
Final Volume: ml	50	50	50	50	50	50	50	50		

Quality Control

	LRB	LFB	LLFB	QCS/CRM	Matrix Spike
Spike Standard		500µl SCD			500µl SCD
Spike Conc.		100PPb			100PPb

Digestion

Digestion Tube Lot #	Hot Block Temperature	Start Time	End Time
1312222	950	0950	1550

Comments

Charge Code

ANALYSIS CHECKLIST

Run Date: 6-13-14

Analyst: ES

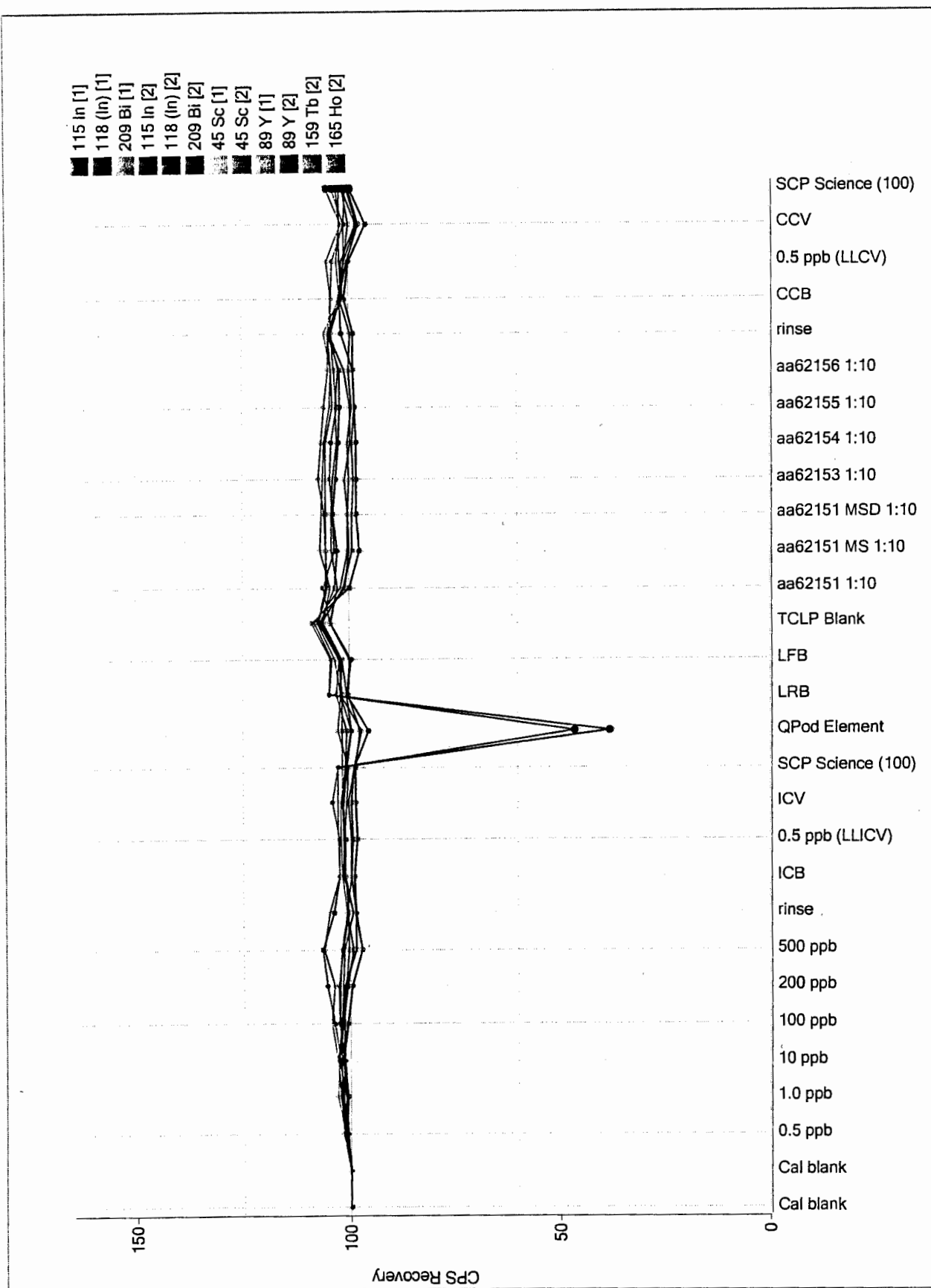
ANALYTES											
Ag	Al	As	Ba	Cd	Cr	Cu	Fe	Mn	Ni	Pb	Se Zn
Other: _____											

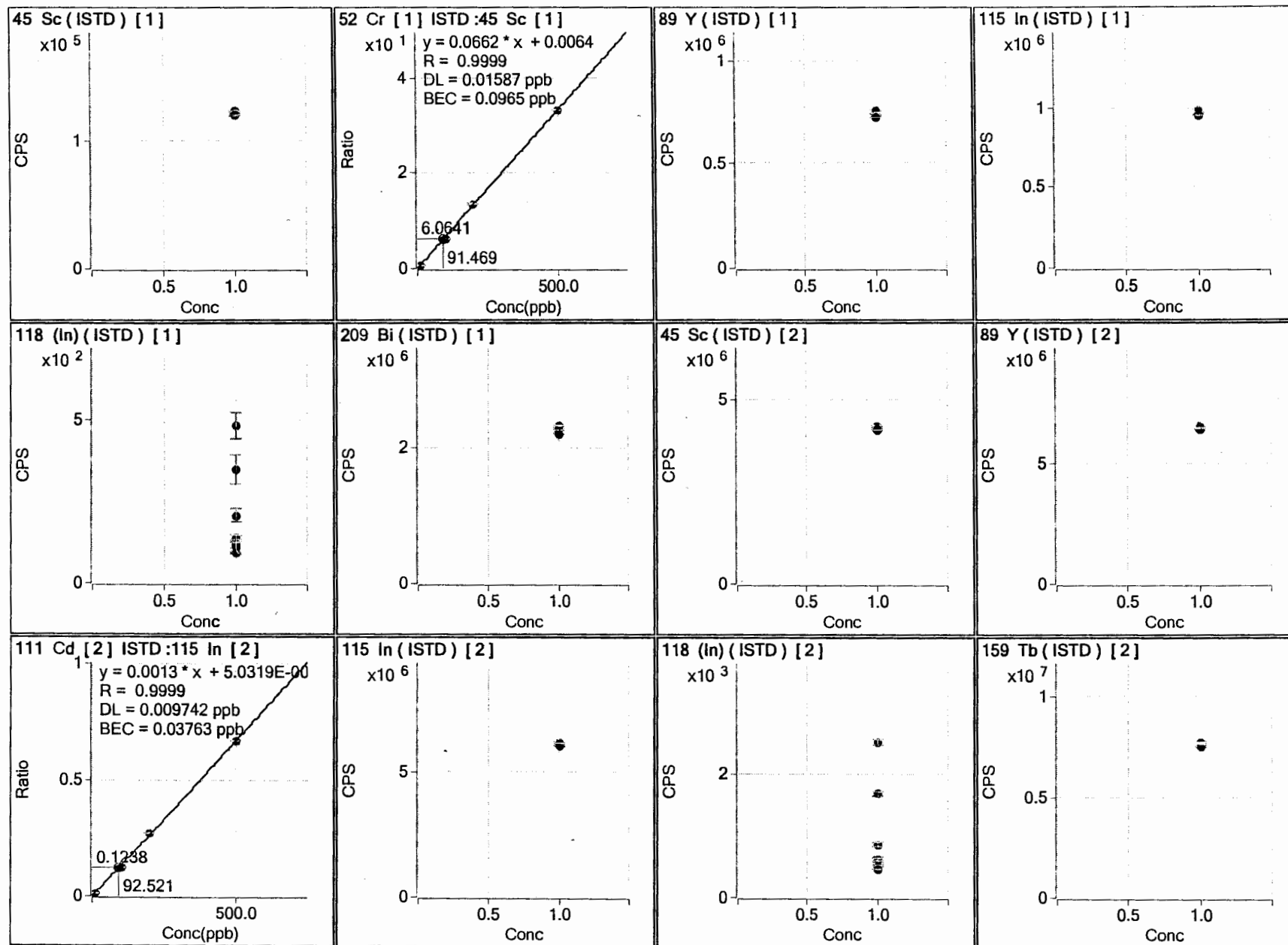
QC RESULTS

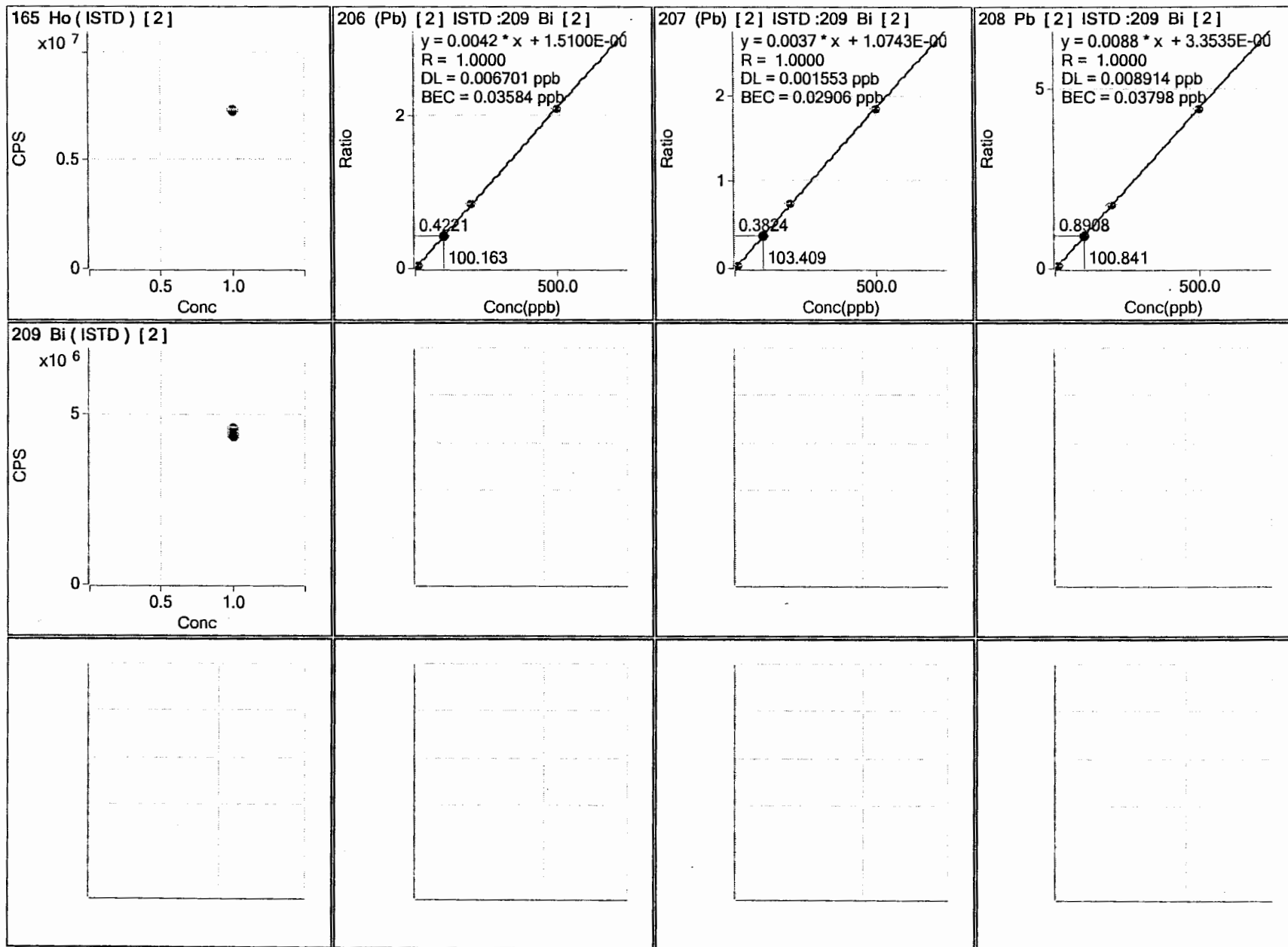
QC Parameter	Included?	Within Limits?
CCB	✓	✓
LRB	✓	✓
LFB	✓	✓
Matrix Spike (LFM1)	✓	Cd-High
Matrix Spike Dup (LFMDUP)	✓	✓

Analyte	QCS True Value	QCS Obtained Value	Within Limits?
ICV - Cr	100	92.9	✓
Cd	100	94.4	✓
Pb	100	102.5	✓
SCP - Cr	100	92.3	✓
Cd	100	92.2	✓
Pb	100	101.2	✓
CCV - Cr	100	93.8	✓
Cd	100	96.5	✓
Pb	100	105.4	✓
SCP - Cr	100	91.5	✓
Cd	100	92.5	✓
Pb	100	100.8	✓

SAMPLES ANALYZED		
62151 1:10		
62151 MS 1:10		
62151 MSD 1:10		
62152 1:10		
62154 1:10		
62155 1:10		
62156 1:10		

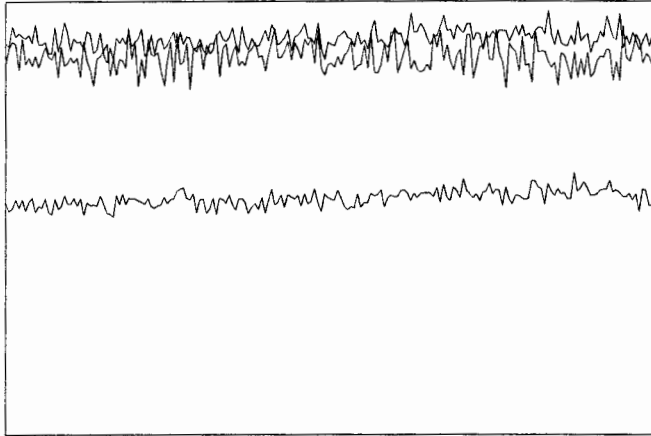






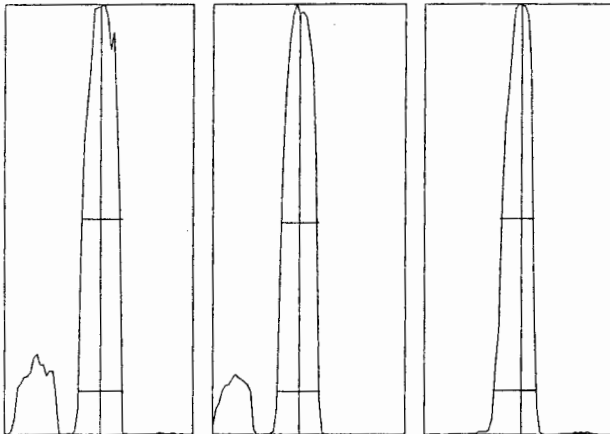
Tune Report

Tune File : nogas.u
Comment : 6-13-14



Integration Time: 0.1000 sec
Sampling Period: 0.3100 sec
n: 200
Oxide: 156/140 1.009%
Doubly Charged: 70/140 1.689%

m/z	Range	Count	Mean	RSD%	Background
7	2,000	1713.0	1742.5	3.62	12.70
89	10,000	9512.0	9155.5	2.34	12.60
205	10,000	5594.0	5481.5	3.28	38.60



m/z:	7	89	205
Height:	1,812	9,232	5,303
Axis:	7.05	88.90	205.05
W-50%:	0.65	0.60	0.55
W-10%:	0.700	0.6500	0.700

Integration Time: 0.1000 sec
Acquisition Time: 22.7600 sec

Y axis : Linear

Tune Report

Tune File : nogas.u
Comment : 6-13-14

Tuning Parameters

===Plasma Condition===

RF Power : 1550 W
RF Matching : 1.8 V
Smpl Depth : 8 mm
Torch-H : -0.6 mm
Torch-V : -0.3 mm
Carrier Gas : 0.75 L/min
Dilution Mode : OFF
Makeup Gas : 0.1 L/min
Optional Gas : --- %
Nebulizer Pump : 0.1 rps
Sample Pump : --- rps
S/C Temp : 2 degC

===Ion Lenses===

Extract 1 : 0 V
Extract 2 : -195 V
Omega Bias : -80 V
Omega Lens : 10.4 V
Cell Entrance : -40 V
Cell Exit : -60 V
Deflect : 15.8 V
Plate Bias : -40 V
===Octopole Parameters===
OctP RF : 180 V
OctP Bias : -8 V

===Q-Pole Parameters===

AMU Gain : 140
AMU Offset : 128
Axis Gain : 1.0013
Axis Offset : 0.09
QP Bias : -3 V

===Detector Parameters===

Discriminator : 4.5 mV
Analog HV : 1847 V
Pulse HV : 1546 V

===Reaction Cell===

Reaction Mode : OFF

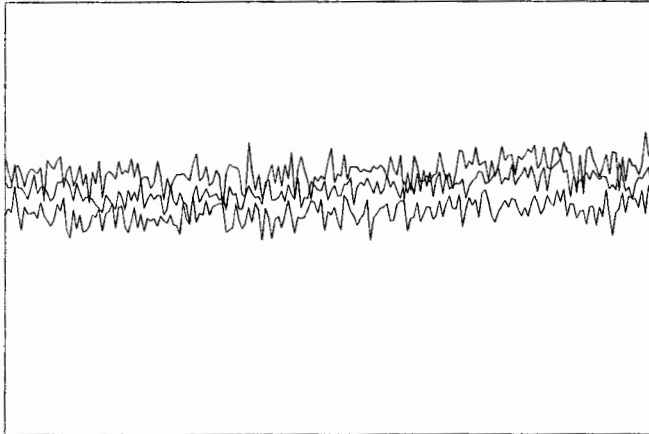
H2 Gas : --- mL/min

He Gas : 0 mL/min

Optional Gas : --- %

Tune Report

Tune File : he.u
Comment : 6-13-14



Integration Time: 0.1000 sec
Sampling Period: 0.3100 sec
n: 200
Oxide: 156/140 0.314%
Doubly Charged: 70/140 1.037%

m/z	Range	Count	Mean	RSD%	Background
59	2,000	1258.0	1226.5	4.98	0.40
89	2,000	1060.0	1030.9	5.14	0.90
205	5,000	2990.0	2861.5	4.65	3.10

Tuning Parameters

===Plasma Condition===

RF Power : 1550 W
RF Matching : 1.8 V
Smpl Depth : 8 mm
Torch-H : -0.6 mm
Torch-V : -0.3 mm
Carrier Gas : 0.75 L/min
Dilution Mode : OFF
Makeup Gas : 0.1 L/min
Optional Gas : --- %
Nebulizer Pump : 0.1 rps
Sample Pump : --- rps
S/C Temp : 2 degC

===Ion Lenses===

Extract 1 : 0 V
Extract 2 : -195 V
Omega Bias : -80 V
Omega Lens : 10.4 V
Cell Entrance : -40 V
Cell Exit : -60 V
Deflect : 2.4 V
Plate Bias : -60 V
===Octopole Parameters===
OctP RF : 180 V
OctP Bias : -18 V

===Q-Pole Parameters===

AMU Gain : 140
AMU Offset : 128
Axis Gain : 1.0013
Axis Offset : 0.09
QP Bias : -15 V

===Detector Parameters===

Discriminator : 4.5 mV
Analog HV : 1847 V
Pulse HV : 1546 V

===Reaction Cell===

Reaction Mode : ON
H2 Gas : --- mL/min

He Gas : 4.3 mL/min Optional Gas : --- %

P/A Factor Tuning Report

Acquired: Jun 13 2014 09:57 am

Mass[amu]	Element	P/A Factor
45	Sc	0.122041
52	Cr	0.129016
53	Cr	0.127795
89	Y	0.138642
111	Cd	0.148818
114	Cd	0.149407
115	In	0.148442
118	(In)	Sensitivity too low
159	Tb	0.153388
165	Ho	0.154701
206	(Pb)	0.160218
207	(Pb)	0.160214
208	Pb	0.161023
209	Bi	0.160364

===Detector Parameters===

Discriminator: 4.5 mV
Analog HV: 1847 V
Pulse HV: 1546 V

D:\ICPMH\1\7500\qctune.d

QC Tune Report

Data File: D:\ICPMH\1\7500\QCTUNE.D
Date Acquired: 13 Jun 2014 10:05:47 am
Operator:
Misc Info:
Vial Number: 0
Current Method: D:\ICPMH\1\METHODS\TN6020.m

Minimum Response(CPS)

Element	Actual	Required	Flag
---------	--------	----------	------

RSD (%)

Element	Actual	Required	Flag
---------	--------	----------	------

7 Li	0.72	5.00	
59 Co	1.34	5.00	
115 In	0.87	5.00	
205 Tl	1.76	5.00	

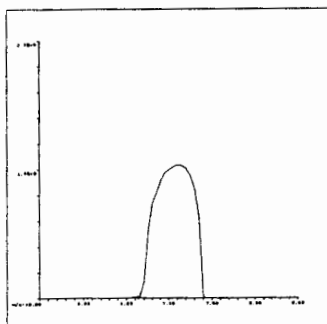
Ion Ratio

Element	Actual	Required	Flag
---------	--------	----------	------

Maximum Bkg. Count(CPS)

Element	Actual	Required	Flag
---------	--------	----------	------

D:\ICPMH\1\7500\qctune.d



7 Li

Mass Calib.

Actual: 7.10

Required: 6.90-7.10

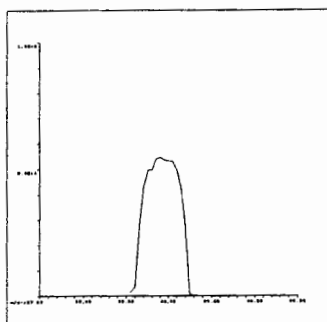
Flag:

Peak Width

Actual: 0.65

Required: 0.75

Flag:



59 Co

Mass Calib.

Actual: 58.95

Required: 58.90-59.10

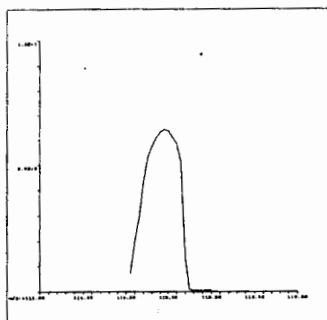
Flag:

Peak Width

Actual: 0.55

Required: 0.75

Flag:



115 In

Mass Calib.

Actual: 114.95

Required: 114.90-115.10

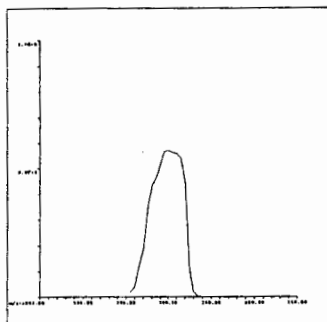
Flag:

Peak Width

Actual: 0.60

Required: 0.75

Flag:



205 Tl

Mass Calib.

Actual: 205.05

Required: 204.90-205.10

Flag:

Peak Width

Actual: 0.60

Required: 0.75

Flag:

QC Tune Result:Pass

D:\ICPMH\1\7500\qctune.d

Calibration Blank Report

Sample Name Cal blank
DataPath D:\ICPMH\1\DATA\6-13-14.b
Type CalBlk
Dilution 1

Data File Name 001CALB.D
AcqDate 6/13/2014 10:14
VialNumber 1101
Comment

QC Analyte Table

Element	m/z	ISTD	Tune Step	CPS	%RSD
Cr	52	45	1	932	7.47
Cd	111	115	2	364	5.42
Pb	208	209	2	1940	3.53

QC ISTD Table

Element	m/z	Tune Step	CPS	%RSD
Sc	45	1	114543	1.73
Sc	45	2	4176538	0.29
Y	89	1	699429	1.50
Y	89	2	6430464	0.23
In	115	1	908319	1.27
In	115	2	5976151	0.36
Tb	159	2	7582934	0.34
Ho	165	2	7179218	0.56
Bi	209	1	2109343	1.20
Bi	209	2	4306339	0.72

TuneStep	TuneFile
1	he.u
2	nogas.u



Calibration Blank Report

Sample Name Cal blank
DataPath D:\ICPMH\1\DATA\6-13-14.b
Type CalBlk
Dilution 1

Data File Name 002CALB.D
AcqDate 6/13/2014 10:21
VialNumber 1101
Comment

QC Analyte Table

Element	m/z	ISTD	Tune Step	CPS	%RSD
Cr	52	45	1	777	4.90
Cd	111	115	2	304	8.05
Pb	208	209	2	1446	6.88

QC ISTD Table

Element	m/z	Tune Step	CPS	%RSD
Sc	45	1	121592	0.59
Sc	45	2	4156932	0.68
Y	89	1	749242	0.43
Y	89	2	6404370	0.40
In	115	1	962799	0.19
In	115	2	6043730	0.62
Tb	159	2	7586916	0.24
Ho	165	2	7204379	1.22
Bi	209	1	2180407	0.47
Bi	209	2	4312996	1.01

TuneStep	TuneFile
1	he.u
2	nogas.u

Calibration Standard Report

Sample Name	0.5 ppb	Data File Name	001CAL.S.D
DataPath	D:\ICPMH\1\DATA\6-13-14.b	AcqDate	6/13/2014 10:27
Type	CalStd	VialNumber	1102
Dilution	1	Comment	
Operator	EScarbrough	ISTDRefDataFileName	002CALB.D

QC Analyte Table

Element	m/z	ISTD	Tune Step	CPS	%RSD
Cr	52	45	1	4395	1.48
Cd	111	115	2	4066	1.69
Pb	208	209	2	20071	2.79

QC ISTD Table

Element	m/z	Tune Step	CPS	%RSD	Reference CPS	%Recovery	Lower Limit	Upper Limit	QC Flag
Sc	45	1	122819	0.36	121592	101.0	60	125	
Sc	45	2	4218387	0.49	4156932	101.5	60	125	
Y	89	1	753834	0.59	749242	100.6	60	125	
Y	89	2	6510418	0.42	6404370	101.7	60	125	
In	115	1	974462	0.49	962799	101.2	60	125	
In	115	2	6104781	0.50	6043730	101.0	60	125	
Tb	159	2	7684471	0.86	7586916	101.3	60	125	
Ho	165	2	7263275	0.65	7204379	100.8	60	125	
Bi	209	1	2207670	0.90	2180407	101.3	60	125	
Bi	209	2	4358508	1.09	4312996	101.1	60	125	

TuneStep	TuneFile
1	he.u
2	nogas.u

Calibration Standard Report

Sample Name 1.0 ppb
DataPath D:\ICPMH\1\DATA\6-13-14.b
Type CalStd
Dilution 1
Operator EScarbrough
Data File Name 002CAL.S.D
AcqDate 6/13/2014 10:34
VialNumber 1103
Comment
ISTDRefDataFileName 002CALB.D

QC Analyte Table

Element	m/z	ISTD	Tune Step	CPS	%RSD
Cr	52	45	1	8203	1.56
Cd	111	115	2	8084	1.50
Pb	208	209	2	39342	0.93

QC ISTD Table

Element	m/z	Tune Step	CPS	%RSD	Reference CPS	%Recovery	Lower Limit	Upper Limit	QC Flag
Sc	45	1	122744	0.75	121592	100.9	60	125	
Sc	45	2	4277582	0.73	4156932	102.9	60	125	
Y	89	1	756870	0.59	749242	101.0	60	125	
Y	89	2	6537190	0.51	6404370	102.1	60	125	
In	115	1	973055	0.08	962799	101.1	60	125	
In	115	2	6148989	0.74	6043730	101.7	60	125	
Tb	159	2	7752094	0.48	7586916	102.2	60	125	
Ho	165	2	7261695	0.86	7204379	100.8	60	125	
Bi	209	1	2234284	0.87	2180407	102.5	60	125	
Bi	209	2	4388489	0.77	4312996	101.8	60	125	

TuneStep	TuneFile
1	he.u
2	nogas.u

Calibration Standard Report

Sample Name	10 ppb	Data File Name	003CALS.D
DataPath	D:\ICPMH\1\DATA\6-13-14.b	AcqDate	6/13/2014 10:41
Type	CalStd	VialNumber	1104
Dilution	1	Comment	
Operator	EScarbrough	ISTDRefDataFileName	002CALB.D

QC Analyte Table

Element	m/z	ISTD	Tune Step	CPS	%RSD
Cr	52	45	1	76006	0.77
Cd	111	115	2	78585	0.14
Pb	208	209	2	379999	0.25

QC ISTD Table

Element	m/z	Tune Step	CPS	%RSD	Reference CPS	%Recovery	Lower Limit	Upper Limit	QC Flag
Sc	45	1	123647	0.47	121592	101.7	60	125	
Sc	45	2	4272376	0.43	4156932	102.8	60	125	
Y	89	1	762647	0.34	749242	101.8	60	125	
Y	89	2	6596082	0.22	6404370	103.0	60	125	
In	115	1	988543	0.30	962799	102.7	60	125	
In	115	2	6129676	0.36	6043730	101.4	60	125	
Tb	159	2	7731481	0.57	7586916	101.9	60	125	
Ho	165	2	7302483	1.40	7204379	101.4	60	125	
Bi	209	1	2249095	1.15	2180407	103.2	60	125	
Bi	209	2	4408012	0.54	4312996	102.2	60	125	

TuneStep	TuneFile
1	he.u
2	nogas.u

Calibration Standard Report

Sample Name	100 ppb	Data File Name	004CALS.D
DataPath	D:\ICPMH\1\DATA\6-13-14.b	AcqDate	6/13/2014 10:48
Type	CalStd	VialNumber	1105
Dilution	1	Comment	
Operator	EScarbrough	ISTDRefDataFileName	002CALB.D

QC Analyte Table

Element	m/z	ISTD	Tune Step	CPS	%RSD
Cr	52	45	1	766461	0.32
Cd	111	115	2	783826	0.56
Pb	208	209	2	4060737	1.22

QC ISTD Table

Element	m/z	Tune Step	CPS	%RSD	Reference CPS	%Recovery	Lower Limit	Upper Limit	QC Flag
Sc	45	1	123014	0.94	121592	101.2	60	125	
Sc	45	2	4246317	0.99	4156932	102.2	60	125	
Y	89	1	753303	0.36	749242	100.5	60	125	
Y	89	2	6540827	0.74	6404370	102.1	60	125	
In	115	1	978418	0.36	962799	101.6	60	125	
In	115	2	6215647	0.54	6043730	102.8	60	125	
Tb	159	2	7767426	1.14	7586916	102.4	60	125	
Ho	165	2	7295864	1.20	7204379	101.3	60	125	
Bi	209	1	2277837	0.65	2180407	104.5	60	125	
Bi	209	2	4480138	0.46	4312996	103.9	60	125	

TuneStep	TuneFile
1	he.u
2	nogas.u

Calibration Standard Report

Sample Name	200 ppb	Data File Name	005CALS.D
DataPath	D:\ICPMH\1\DATA\6-13-14.b	AcqDate	6/13/2014 10:55
Type	CalStd	VialNumber	1106
Dilution	1	Comment	
Operator	EScarbrough	ISTDRefDataFileName	002CALB.D

QC Analyte Table

Element	m/z	ISTD	Tune Step	CPS	%RSD
Cr	52	45	1	1642426	0.97
Cd	111	115	2	1677585	0.59
Pb	208	209	2	8029444	0.78

QC ISTD Table

Element	m/z	Tune Step	CPS	%RSD	Reference CPS	%Recovery	Lower Limit	Upper Limit	QC Flag
Sc	45	1	123045	0.44	121592	101.2	60	125	
Sc	45	2	4200069	0.35	4156932	101.0	60	125	
Y	89	1	745463	0.41	749242	99.5	60	125	
Y	89	2	6520412	0.72	6404370	101.8	60	125	
In	115	1	967651	0.45	962799	100.5	60	125	
In	115	2	6204329	0.31	6043730	102.7	60	125	
Tb	159	2	7761069	0.25	7586916	102.3	60	125	
Ho	165	2	7324053	0.31	7204379	101.7	60	125	
Bi	209	1	2259729	0.40	2180407	103.6	60	125	
Bi	209	2	4548721	0.21	4312996	105.5	60	125	

TuneStep	TuneFile
1	he.u
2	nogas.u

Calibration Standard Report

Sample Name 500 ppb	Data File Name 006CAL.S.D
DataPath D:\ICPMH\1\DATA\6-13-14.b	AcqDate 6/13/2014 11:01
Type CalStd	VialNumber 1107
Dilution 1	Comment
Operator EScarbrough	ISTDRefDataFileName 002CALB.D

QC Analyte Table

Element	m/z	ISTD	Tune Step	CPS	%RSD
Cr	52	45	1	3971751	0.43
Cd	111	115	2	4112287	0.22
Pb	208	209	2	20274527	0.64

QC ISTD Table

Element	m/z	Tune Step	CPS	%RSD	Reference CPS	%Recovery	Lower Limit	Upper Limit	QC Flag
Sc	45	1	119772	0.57	121592	98.5	60	125	
Sc	45	2	4171302	0.33	4156932	100.3	60	125	
Y	89	1	729547	0.36	749242	97.4	60	125	
Y	89	2	6481325	0.32	6404370	101.2	60	125	
In	115	1	954435	0.22	962799	99.1	60	125	
In	115	2	6147098	0.37	6043730	101.7	60	125	
Tb	159	2	7738456	0.39	7586916	102.0	60	125	
Ho	165	2	7291144	0.91	7204379	101.2	60	125	
Bi	209	1	2311532	0.28	2180407	106.0	60	125	
Bi	209	2	4595922	0.86	4312996	106.6	60	125	

TuneStep	TuneFile
1	he.u
2	nogas.u

Sample Report

Sample Name rinse
DataPath D:\ICPMH\1\DATA\6-13-14.b
Type Sample
Dilution 1
Operator EScarbrough
SamplePassFail Pass

Data File Name 001SMPL.D
AcqDate 6/13/2014 11:08
VialNumber 1303
Comment
ISTDRefDataFileName 002CALB.D
ISTD PassFail Pass

QC Analyte Table

Element	m/z	ISTD	Tune Step	Meas Value	FinalConcentration	Units	High Value	QC Flag
Cr	52	45	1	0.00	0.00	ppb	450	
Cd	111	115	2	-0.03	-0.03	ppb	450	
Pb	208	209	2	0.01	0.01	ppb	450	

QC ISTD Table

Element	m/z	Tune Step	CPS	%RSD	Reference CPS	%Recovery	Lower Limit	Upper Limit	QC Flag
Sc	45	1	120004	1.05	121592	98.7	60	125	
Sc	45	2	4165192	0.58	4156932	100.2	60	125	
Y	89	1	737560	0.54	749242	98.4	60	125	
Y	89	2	6347901	0.31	6404370	99.1	60	125	
In	115	1	969007	0.37	962799	100.6	60	125	
In	115	2	6052877	0.86	6043730	100.2	60	125	
Tb	159	2	7631693	0.74	7586916	100.6	60	125	
Ho	165	2	7140661	0.16	7204379	99.1	60	125	
Bi	209	1	2285239	0.17	2180407	104.8	60	125	
Bi	209	2	4473599	1.16	4312996	103.7	60	125	

TuneStep	TuneFile
1	he.u
2	nogas.u

Continuing Calibration Blank (CCB) - US EPA Method 200.8

Sample Name	ICB	Data File Name	002SMPL.D
DataPath	D:\ICPMH\1\DATA\6-13-14.b	Acq Date Time	2014-06-13T11:15:32-05:00
Type	2-CCB	VialNumber	1101
Dilution	1	Comment	
Operator	EScarbrough	ISTDRefDataFileName	002CALB.D
SamplePassFail	Pass	ISTD PassFail	Pass

QC Analyte Table

Element	m/z	ISTD	Tune Step	Meas Value	Units	QC High	QC Flag
Cr	52	45	1	0.01	ppb	1.1	
Cd	111	115	2	-0.01	ppb	1.1	
Pb	208	209	2	0.01	ppb	1.1	

QC ISTD Table

Element	m/z	Tune Step	CPS	%RSD	Reference CPS	%Recovery	Lower Limit	Upper Limit	QC Flag
Sc	45	1	121019	1.25	121592	99.5	60	125	
Sc	45	2	4195673	0.60	4156932	100.9	60	125	
Y	89	1	741791	1.08	749242	99.0	60	125	
Y	89	2	6476161	0.11	6404370	101.1	60	125	
In	115	1	957944	0.98	962799	99.5	60	125	
In	115	2	6101426	0.36	6043730	101.0	60	125	
Tb	159	2	7710266	0.66	7586916	101.6	60	125	
Ho	165	2	7290902	0.38	7204379	101.2	60	125	
Bi	209	1	2234065	0.86	2180407	102.5	60	125	
Bi	209	2	4408769	0.59	4312996	102.2	60	125	

TuneStep	TuneFile
1	he.u
2	nogas.u

6-13-14
⑤

Sample Report

Sample Name 0.5 ppb (LLICV)
DataPath D:\ICPMH\1\DATA\6-13-14.b
Type Sample
Dilution 1
Operator EScarbrough
SamplePassFail Pass

Data File Name 003SMPL.D
AcqDate 6/13/2014 11:22
VialNumber 1102
Comment
ISTDRefDataFileName 002CALB.D
ISTD PassFail Pass

QC Analyte Table

Element	m/z	ISTD	Tune Step	Meas Value	FinalConcentration	Units	High Value	QC Flag
Cr	52	45	1	0.45	0.45	ppb	450	
Cd	111	115	2	0.44	0.44	ppb	450	
Pb	208	209	2	0.49	0.49	ppb	450	

QC ISTD Table

Element	m/z	Tune Step	CPS	%RSD	Reference CPS	%Recovery	Lower Limit	Upper Limit	QC Flag
Sc	45	1	121238	1.18	121592	99.7	60	125	
Sc	45	2	4205974	0.10	4156932	101.2	60	125	
Y	89	1	736931	1.51	749242	98.4	60	125	
Y	89	2	6490870	0.22	6404370	101.4	60	125	
In	115	1	954333	1.23	962799	99.1	60	125	
In	115	2	6103416	0.67	6043730	101.0	60	125	
Tb	159	2	7746564	0.25	7586916	102.1	60	125	
Ho	165	2	7287775	0.50	7204379	101.2	60	125	
Bi	209	1	2238568	0.52	2180407	102.7	60	125	
Bi	209	2	4421712	0.78	4312996	102.5	60	125	

TuneStep	TuneFile
1	he.u
2	nogas.u

6-13-14
⑤

Continuing Calibration Verification (CCV) - US EPA Method 200.8

Sample Name ICV
DataPathName D:\ICPMH\1\DATA\6-13-14.b
Type 2-CCV
Dilution 1
Operator EScarborough
SamplePassFail Pass

Data File Name 004SMPL.D
AcqDate 6/13/2014 11:29
VialNumber 1105
Comment
ISTD Ref File 002CALB.D
ISTD PassFail Pass

QC Analyte Table

Element	m/z	ISTD	TuneStep	Meas Value	Units	ExpValue	%Rec	QC1 Low	QC1 High	QC2 Low	QC2 High	QC Flag
Cr	52	45	1	92.88	ppb	100	92.9	85	115	90	110	
Cd	111	115	2	94.44	ppb	100	94.4	85	115	90	110	
Pb	208	209	2	102.54	ppb	100	102.5	85	115	90	110	

QC ISTD Table

Element	m/z	Tune Step	CPS	%RSD	Reference CPS	%Rec	Lower Limit	Upper Limit	QC Flag
Sc	45	1	121939	0.32	121592	100.3	60	125	
Sc	45	2	4181422	1.49	4156932	100.6	60	125	
Y	89	1	737826	0.55	749242	98.5	60	125	
Y	89	2	6508260	1.17	6404370	101.6	60	125	
In	115	1	957921	0.56	962799	99.5	60	125	
In	115	2	6139133	0.96	6043730	101.6	60	125	
Tb	159	2	7731138	0.57	7586916	101.9	60	125	
Ho	165	2	7299968	0.82	7204379	101.3	60	125	
Bi	209	1	2241810	1.42	2180407	102.8	60	125	
Bi	209	2	4483853	0.78	4312996	104.0	60	125	

TuneStep	TuneFile
1	he.u
2	nogas.u

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⑤

Continuing Calibration Verification (CCV) - US EPA Method 200.8

Sample Name SCP Science (100)
DataPathName D:\ICPMH\1\DATA\6-13-14.b
Type 2-CCV
Dilution 1
Operator EScarbrough
SamplePassFail Pass

Data File Name 005SMPL.D
AcqDate 6/13/2014 11:35
VialNumber 1301
Comment
ISTD Ref File 002CALB.D
ISTD PassFail Pass

QC Analyte Table

Element	m/z	ISTD	TuneStep	Meas Value	Units	ExpValue	%Rec	QC1 Low	QC1 High	QC2 Low	QC2 High	QC Flag
Cr	52	45	1	92.34	ppb	100	92.3	85	115	90	110	
Cd	111	115	2	92.17	ppb	100	92.2	85	115	90	110	
Pb	208	209	2	101.17	ppb	100	101.2	85	115	90	110	

QC ISTD Table

Element	m/z	Tune Step	CPS	%RSD	Reference CPS	%Rec	Lower Limit	Upper Limit	QC Flag
Sc	45	1	120115	0.55	121592	98.8	60	125	
Sc	45	2	4172344	0.92	4156932	100.4	60	125	
Y	89	1	739009	0.64	749242	98.6	60	125	
Y	89	2	6466440	0.75	6404370	101.0	60	125	
In	115	1	952159	0.80	962799	98.9	60	125	
In	115	2	6135929	0.57	6043730	101.5	60	125	
Tb	159	2	7659469	0.19	7586916	101.0	60	125	
Ho	165	2	7255014	0.35	7204379	100.7	60	125	
Bi	209	1	2239923	0.32	2180407	102.7	60	125	
Bi	209	2	4428158	0.33	4312996	102.7	60	125	

TuneStep	TuneFile
1	he.u
2	nogas.u

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(5)

Sample Report

Sample Name	QPod Element	Data File Name	006SMPL.D
DataPath	D:\ICPMH\1\DATA\6-13-14.B	AcqDate	6/13/2014 11:45
Type	Sample	VialNumber	2401
Dilution	1	Comment	
Operator	EScarbrough	ISTDRefDataFileName	002CALB.D
SamplePassFail	Fail	ISTD PassFail	Pass

QC Analyte Table

Element	m/z	ISTD	Tune Step	Meas Value	FinalConcentration	Units	High Value	QC Flag
Cr	52	45	1	-0.03	-0.03	ppb	450	
Cd	111	115	2	-0.02	-0.02	ppb	450	
Pb	208	209	2	0.02	0.02	ppb	450	

QC ISTD Table

Element	m/z	Tune Step	CPS	%RSD	Reference CPS	%Recovery	Lower Limit	Upper Limit	QC Flag
Sc	45	1	118213	3.32	121592	97.2	60	125	
Sc	45	2	4275421	0.66	4156932	102.9	60	125	
Y	89	1	731715	1.69	749242	97.7	60	125	
Y	89	2	6445262	0.49	6404370	100.6	60	125	
In	115	1	918456	3.80	962799	95.4	60	125	
In	115	2	6139719	0.43	6043730	101.6	60	125	
Tb	159	2	7564180	0.36	7586916	99.7	60	125	
Ho	165	2	7169201	0.25	7204379	99.5	60	125	
Bi	209	1	838679	3.81	2180407	38.5	60	125	IS Fail
Bi	209	2	2002261	0.96	4312996	46.4	60	125	IS Fail

TuneStep	TuneFile
1	he.u
2	nogas.u

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④

Laboratory Reagent Blank (LRB) - US EPA Method 200.8

Sample Name	LRB	Data File Name	007SMPL.D
DataPath	D:\ICPMH\1\DATA\6-13-14.B	AcqDate	6/13/2014 11:52
Type	2-LRB	VialNumber	2101
Dilution	1	Comment	
Operator	EScarbrough	ISTDRefDataFileName	002CALB.D
SamplePassFail	Pass	ISTD PassFail	Pass

QC Analyte Table

Element	m/z	ISTD	Tune Step	Meas Value	Units	QC High	QC Flag
Cr	52	45	1	0.00	ppb	1.1	
Cd	111	115	2	-0.03	ppb	1.1	
Pb	208	209	2	0.00	ppb	1.1	

QC ISTD Table

Element	m/z	Tune Step	CPS	%RSD	Reference CPS	%Recovery	Lower Limit	Upper Limit	QC Flag
Sc	45	1	124094	0.79	121592	102.1	60	125	
Sc	45	2	4241918	0.68	4156932	102.0	60	125	
Y	89	1	750402	0.61	749242	100.2	60	125	
Y	89	2	6599675	0.32	6404370	103.0	60	125	
In	115	1	968119	0.41	962799	100.6	60	125	
In	115	2	6151436	0.81	6043730	101.8	60	125	
Tb	159	2	7739168	0.60	7586916	102.0	60	125	
Ho	165	2	7258113	1.05	7204379	100.7	60	125	
Bi	209	1	2285878	0.15	2180407	104.8	60	125	
Bi	209	2	4513861	0.23	4312996	104.7	60	125	

TuneStep	TuneFile	TuneDate
1	he.u	6/13/2014 11:50:00 AM
2	nogas.u	6/13/2014 11:50:00 AM

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②

Laboratory Fortified Blank (LFB) - US EPA Method 200.8

Sample Name	LFB	Data File Name	008SMPL.D
DataPath	D:\ICPMH\1\DATA\6-13-14.B	AcqDate	6/13/2014 11:59
Type	2-LFB	VialNumber	2102
Dilution	1	Comment	
Operator	EScarbrough	ISTDRefDataFileName	002CALB.D
SamplePassFail	Pass	ISTD PassFail	Pass

QC Analyte Table

Element	m/z	ISTD	Tune Step	Conc.	Units	Spike Amt	%Recovery	%QC Low	%QC High	QC Flag
Cr	52	45	1	94.43	ppb	100	94.4	85	115	
Cd	111	115	2	92.91	ppb	100	92.9	85	115	
Pb	208	209	2	102.80	ppb	100	102.8	85	115	

QC ISTD Table

Element	m/z	Tune Step	CPS	%RSD	Reference CPS	%Recovery	Lower Limiy	Upper Limit	QC Flag
Sc	45	1	123555	1.23	121592	101.6	60	125	
Sc	45	2	4298746	0.41	4156932	103.4	60	125	
Y	89	1	750118	0.24	749242	100.1	60	125	
Y	89	2	6557639	0.54	6404370	102.4	60	125	
In	115	1	960188	0.35	962799	99.7	60	125	
In	115	2	6194610	0.57	6043730	102.5	60	125	
Tb	159	2	7740015	0.74	7586916	102.0	60	125	
Ho	165	2	7320149	1.08	7204379	101.6	60	125	
Bi	209	1	2270063	0.61	2180407	104.1	60	125	
Bi	209	2	4505179	1.24	4312996	104.5	60	125	

TuneStep	TuneFile
1	he.u
2	nogas.u

6-13-14
②

Laboratory Reagent Blank (LRB) - US EPA Method 200.8

Sample Name	TCLP Blank	Data File Name	009SMPL.D
DataPath	D:\ICPMH\1\DATA\6-13-14.B	AcqDate	6/13/2014 12:05
Type	2-LRB	VialNumber	2103
Dilution	1	Comment	
Operator	EScarbrough	ISTDRefDataFileName	002CALB.D
SamplePassFail	Pass	ISTD PassFail	Pass

QC Analyte Table

Element	m/z	ISTD	Tune Step	Meas Value	Units	QC High	QC Flag
Cr	52	45	1	0.16	ppb	1.1	
Cd	111	115	2	-0.02	ppb	1.1	
Pb	208	209	2	0.08	ppb	1.1	

QC ISTD Table

Element	m/z	Tune Step	CPS	%RSD	Reference CPS	%Recovery	Lower Limit	Upper Limit	QC Flag
Sc	45	1	128924	0.49	121592	106.0	60	125	
Sc	45	2	4470951	0.83	4156932	107.6	60	125	
Y	89	1	781998	0.91	749242	104.4	60	125	
Y	89	2	6865020	0.35	6404370	107.2	60	125	
In	115	1	1004060	0.49	962799	104.3	60	125	
In	115	2	6456763	0.64	6043730	106.8	60	125	
Tb	159	2	8093553	0.27	7586916	106.7	60	125	
Ho	165	2	7663438	0.72	7204379	106.4	60	125	
Bi	209	1	2356365	0.66	2180407	108.1	60	125	
Bi	209	2	4699913	1.25	4312996	109.0	60	125	

TuneStep	TuneFile	TuneDate
1	he.u	6/13/2014 12:03:00 PM
2	nogas.u	6/13/2014 12:03:00 PM

6-13-14
②

All Reference (AllRef) Sample Report

Sample Name aa62151 1:10
 Data File Name 010SMPL.D
 DataPath D:\ICPMH\1\DATA\6-13-14.B
 Acq Date Time 2014-06-13T12:12:34-05:00
 AcqDate 6/13/2014 12:12
 Type AllRef
 VialNumber 2104
 Dilution 1
 Comment
 Operator EScarbrough
 ISTDRefDataFileName 002CALB.D
 SamplePassFail Pass
 ISTD PassFail Pass

QC Analyte Table

Element	m/z	ISTD	Tune Step	Meas Value	FinalConcentration	Units	High Value	QC Flag
Cr	52	45	1	19.05	19.05	ppb	450	
Cd	111	115	2	242.42	242.42	ppb	450	
Pb	208	209	2	1.07	1.07	ppb	450	

QC ISTD Table

Element	m/z	Tune Step	CPS	%RSD	Reference CPS	%Recovery	Lower Limit	Upper Limit	QC Flag
Sc	45	1	126845	1.44	121592	104.3	60	125	
Sc	45	2	4381870	0.51	4156932	105.4	60	125	
Y	89	1	769457	0.66	749242	102.7	60	125	
Y	89	2	6726730	1.15	6404370	105.0	60	125	
In	115	1	1020761	5.24	962799	106.0	60	125	
In	115	2	6242160	0.68	6043730	103.3	60	125	
Tb	159	2	7668863	0.81	7586916	101.1	60	125	
Ho	165	2	7288321	0.61	7204379	101.2	60	125	
Bi	209	1	2222763	1.10	2180407	101.9	60	125	
Bi	209	2	4310743	0.63	4312996	99.9	60	125	

TuneStep	TuneFile
1	he.u
2	nogas.u

Chromium

$$19.05 \times 10 = 190.5 = \textcircled{191}$$

Cadmium

$$242.42 \times 10 = 2424.2 = \textcircled{2420}$$

Lead

$$1.07 \times 10 = \textcircled{10.7}$$

$$MQL = 0.5 \times 10 = 5$$

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ES

Laboratory Fortified Matrix (LFM) Sample Report - US EPA Method 200.8

Sample Name	aa62151 MS 1:10	Data File Name	011SMPL.D
DataPath	D:\ICPMH\1\DATA\6-13-14.B	AcqDate	6/13/2014 12:19
Type	2-LFM1	VialNumber	2105
Dilution	1	Comment	
Operator	EScarbrough	ISTDRefDataFileName	002CALB.D
QC Reference DataFile Name	010SMPL.D	SamplePassFail	Fail

QC Analyte Table

Element	m/z	ISTD	Tune Step	Conc.	Ref. Conc.	Units	Spike Amt	%Recovery	%QC Low	%QC High	QC Flag
Cr	52	45	1	30.91	19.05	ppb	10	118.6	75	125	
Cd	111	115	2	267.70	242.42	ppb	10	252.8	75	125	>+-25%
Pb	208	209	2	11.38	1.07	ppb	10	103.2	75	125	

QC ISTD Table

Element	m/z	Tune Step	CPS	%RSD	Reference CPS	%Recovery	Lower Limit	Upper Limit	QC Flag
Sc	45	1	129890	0.59	121592	106.8	60	125	
Sc	45	2	4379365	1.28	4156932	105.4	60	125	
Y	89	1	779845	0.26	749242	104.1	60	125	
Y	89	2	6752552	0.72	6404370	105.4	60	125	
In	115	1	994160	0.49	962799	103.3	60	125	
In	115	2	6213367	1.41	6043730	102.8	60	125	
Tb	159	2	7579718	0.69	7586916	99.9	60	125	
Ho	165	2	7152999	1.07	7204379	99.3	60	125	
Bi	209	1	2184612	1.36	2180407	100.2	60	125	
Bi	209	2	4201373	0.83	4312996	97.4	60	125	

TuneStep	TuneFile
1	he.u
2	nogas.u

Actual spike concentration was 100 ppb, but this value was changed to ten in the report to account for the 1:10 Dilution. (ES)

6-13-14
(ES)

Laboratory Fortified Matrix Duplicate (LFMDup) Sample Report - US EPA 200.8

Sample Name	aa62151 MSD 1:10	Data File Name	012SMPL.D
DataPath	D:\ICPMH\1\DATA\6-13-14.B	AcqDate	6/13/2014 12:26
Type	2-LFMDup	VialNumber	2106
Dilution	1	Comment	
Operator	EScarbrough	ISTDRefDataFileName	002CALB.D
QCRefDataFileName	011SMPL.D	SamplePassFail	Pass

QC Analyte Table

Element	m/z	ISTD	Tune Step	Conc.	Ref. Conc	Units	RPD	%QC High	QC Flag
Cr	52	45	1	32.95	30.91	ppb	6.4	20	
Cd	111	115	2	306.13	267.70	ppb	13.4	20	
Pb	208	209	2	11.41	11.38	ppb	0.2	20	

QC ISTD Table

Element	m/z	Tune Step	CPS	%RSD	%Recovery	Reference CPS	Lower Limiy	Upper Limit	QC Flag
Sc	45	1	129622	0.20	106.6	121592	60	125	
Sc	45	2	4376076	4.56	105.3	4156932	60	125	
Y	89	1	779904	0.41	104.1	749242	60	125	
Y	89	2	6780272	3.08	105.9	6404370	60	125	
In	115	1	997234	0.77	103.6	962799	60	125	
In	115	2	6266858	4.60	103.7	6043730	60	125	
Tb	159	2	7604978	4.07	100.2	7586916	60	125	
Ho	165	2	7148415	3.32	99.2	7204379	60	125	
Bi	209	1	2190240	0.76	100.5	2180407	60	125	
Bi	209	2	4242776	3.80	98.4	4312996	60	125	

TuneStep	TuneFile
1	he.u
2	nogas.u

6-13-14
⑤

Sample Report

Sample Name	aa62153 1:10	Data File Name	013SMPL.D
DataPath	D:\ICPMH\1\DATA\6-13-14.B	AcqDate	6/13/2014 12:32
Type	Sample	VialNumber	2107
Dilution	1	Comment	
Operator	EScarbrough	ISTDRefDataFileName	002CALB.D
SamplePassFail	Pass	ISTD PassFail	Pass

QC Analyte Table

Element	m/z	ISTD	Tune Step	Meas Value	FinalConcentration	Units	High Value	QC Flag
Cr	52	45	1	13.06	13.06	ppb	450	
Cd	111	115	2	159.44	159.44	ppb	450	
Pb	208	209	2	0.37	0.37	ppb	450	

QC ISTD Table

Element	m/z	Tune Step	CPS	%RSD	Reference CPS	%Recovery	Lower Limit	Upper Limit	QC Flag
Sc	45	1	129098	0.82	121592	106.2	60	125	
Sc	45	2	4376132	0.13	4156932	105.3	60	125	
Y	89	1	776991	0.32	749242	103.7	60	125	
Y	89	2	6858872	0.27	6404370	107.1	60	125	
In	115	1	992811	0.48	962799	103.1	60	125	
In	115	2	6302224	0.09	6043730	104.3	60	125	
Tb	159	2	7579795	0.68	7586916	99.9	60	125	
Ho	165	2	7135360	0.57	7204379	99.0	60	125	
Bi	209	1	2205566	0.26	2180407	101.2	60	125	
Bi	209	2	4243714	0.40	4312996	98.4	60	125	

TuneStep	TuneFile
1	he.u
2	nogas.u

Chromium

$$13.06 \times 10 = 130.6 = \textcircled{131}$$

Cadmium

$$159.44 \times 10 = 1594.4 = \textcircled{1590}$$

Lead

$$0.37 \times 10 = \textcircled{3.7} < \text{MQL}$$

MQL

$$0.5 \times 10 = 5$$

6-13-14
ES

Sample Report

Sample Name	aa62154 1:10	Data File Name	014SMPL.D
DataPath	D:\ICPMH\1\DATA\6-13-14.B	AcqDate	6/13/2014 12:39
Type	Sample	VialNumber	2108
Dilution	1	Comment	
Operator	EScarbrough	ISTDRefDataFileName	002CALB.D
SamplePassFail	Pass	ISTD PassFail	Pass

QC Analyte Table

Element	m/z	ISTD	Tune Step	Meas Value	FinalConcentration	Units	High Value	QC Flag
Cr	52	45	1	21.71	21.71	ppb	450	
Cd	111	115	2	239.55	239.55	ppb	450	
Pb	208	209	2	0.98	0.98	ppb	450	

QC ISTD Table

Element	m/z	Tune Step	CPS	%RSD	Reference CPS	%Recovery	Lower Limit	Upper Limit	QC Flag
Sc	45	1	128796	2.96	121592	105.9	60	125	
Sc	45	2	4386326	0.70	4156932	105.5	60	125	
Y	89	1	770435	4.54	749242	102.8	60	125	
Y	89	2	6823049	0.26	6404370	106.5	60	125	
In	115	1	985072	3.94	962799	102.3	60	125	
In	115	2	6279384	0.52	6043730	103.9	60	125	
Tb	159	2	7619687	0.11	7586916	100.4	60	125	
Ho	165	2	7139847	0.35	7204379	99.1	60	125	
Bi	209	1	2173905	3.68	2180407	99.7	60	125	
Bi	209	2	4241027	0.69	4312996	98.3	60	125	

TuneStep	TuneFile
1	he.u
2	nogas.u

Chromium

$$21.71 \times 10 = 217.1 = \textcircled{217}$$

Cadmium

$$239.55 \times 10 = 2395.5 = \textcircled{2400}$$

Lead

$$0.98 \times 10 = \textcircled{9.8}$$

$$MQL = 0.5 \times 10 = 5$$

6-13-14
⑥

Sample Report

Sample Name aa62155 1:10
DataPath D:\ICPMH\1\DATA\6-13-14.B
Type Sample
Dilution 1
Operator EScarbrough
SamplePassFail Pass

Data File Name 015SMPL.D
AcqDate 6/13/2014 12:46
VialNumber 2109
Comment
ISTDRefDataFileName 002CALB.D
ISTD PassFail Pass

QC Analyte Table

Element	m/z	ISTD	Tune Step	Meas Value	FinalConcentration	Units	High Value	QC Flag
Cr	52	45	1	23.05	23.05	ppb	450	
Cd	111	115	2	250.39	250.39	ppb	450	
Pb	208	209	2	1.33	1.33	ppb	450	

QC ISTD Table

Element	m/z	Tune Step	CPS	%RSD	Reference CPS	%Recovery	Lower Limit	Upper Limit	QC Flag
Sc	45	1	126907	0.72	121592	104.4	60	125	
Sc	45	2	4313067	0.30	4156932	103.8	60	125	
Y	89	1	772857	0.13	749242	103.2	60	125	
Y	89	2	6769859	0.45	6404370	105.7	60	125	
In	115	1	983337	0.46	962799	102.1	60	125	
In	115	2	6198070	0.53	6043730	102.6	60	125	
Tb	159	2	7543586	0.13	7586916	99.4	60	125	
Ho	165	2	7103130	0.08	7204379	98.6	60	125	
Bi	209	1	2173907	0.31	2180407	99.7	60	125	
Bi	209	2	4251581	0.68	4312996	98.6	60	125	

TuneStep	TuneFile
1	he.u
2	nogas.u

Chromium

$$23.05 \times 10 = 230.5 = \textcircled{231}$$

Cadmium

$$250.39 \times 10 = 2503.9 = \textcircled{2500}$$

Lead

$$1.33 \times 10 = \textcircled{13.3}$$

$$MQL = 0.5 \times 10 = 5$$

6-13-14
⑤

Sample Report

Sample Name	aa62156 1:10	Data File Name	016SMPL.D
DataPath	D:\ICPMH\1\DATA\6-13-14.B	AcqDate	6/13/2014 12:53
Type	Sample	VialNumber	2110
Dilution	1	Comment	
Operator	EScarbrough	ISTDRefDataFileName	002CALB.D
SamplePassFail	Pass	ISTD PassFail	Pass

QC Analyte Table

Element	m/z	ISTD	Tune Step	Meas Value	FinalConcentration	Units	High Value	QC Flag
Cr	52	45	1	41.89	41.89	ppb	450	
Cd	111	115	2	365.47	365.47	ppb	450	
Pb	208	209	2	2.56	2.56	ppb	450	

QC ISTD Table

Element	m/z	Tune Step	CPS	%RSD	Reference CPS	%Recovery	Lower Limit	Upper Limit	QC Flag
Sc	45	1	126613	0.54	121592	104.1	60	125	
Sc	45	2	4325274	0.46	4156932	104.0	60	125	
Y	89	1	766631	0.43	749242	102.3	60	125	
Y	89	2	6709922	0.30	6404370	104.8	60	125	
In	115	1	981499	0.44	962799	101.9	60	125	
In	115	2	6241377	0.91	6043730	103.3	60	125	
Tb	159	2	7577223	0.70	7586916	99.9	60	125	
Ho	165	2	7129612	1.57	7204379	99.0	60	125	
Bi	209	1	2201159	0.47	2180407	101.0	60	125	
Bi	209	2	4265241	0.79	4312996	98.9	60	125	

TuneStep	TuneFile
1	he.u
2	nogas.u

Chromium

$$41.89 \times 10 = 418.9 = \textcircled{419}$$

Cadmium

$$365.47 \times 10 = 3654.7 = \textcircled{3650}$$

Lead

$$2.56 \times 10 = 25.6$$

$$MQL = 0.5 \times 10 = 5$$

6-13-14
65

Sample Report

Sample Name	rinse	Data File Name	017SMPL.D
DataPath	D:\ICPMH\1\DATA\6-13-14.B	AcqDate	6/13/2014 13:00
Type	Sample	VialNumber	1303
Dilution	1	Comment	
Operator	EScarbrough	ISTDRefDataFileName	002CALB.D
SamplePassFail	Pass	ISTD PassFail	Pass

QC Analyte Table

Element	m/z	ISTD	Tune Step	Meas Value	FinalConcentration	Units	High Value	QC Flag
Cr	52	45	1	-0.04	-0.04	ppb	450	
Cd	111	115	2	-0.02	-0.02	ppb	450	
Pb	208	209	2	-0.01	-0.01	ppb	450	

QC ISTD Table

Element	m/z	Tune Step	CPS	%RSD	Reference CPS	%Recovery	Lower Limit	Upper Limit	QC Flag
Sc	45	1	128622	0.23	121592	105.8	60	125	
Sc	45	2	4358788	0.15	4156932	104.9	60	125	
Y	89	1	778451	0.17	749242	103.9	60	125	
Y	89	2	6703915	0.63	6404370	104.7	60	125	
In	115	1	1007693	0.24	962799	104.7	60	125	
In	115	2	6292186	0.37	6043730	104.1	60	125	
Tb	159	2	7562016	0.90	7586916	99.7	60	125	
Ho	165	2	7122143	0.34	7204379	98.9	60	125	
Bi	209	1	2277225	0.83	2180407	104.4	60	125	
Bi	209	2	4385825	0.95	4312996	101.7	60	125	

TuneStep	TuneFile
1	he.u
2	nogas.u

Continuing Calibration Blank (CCB) - US EPA Method 200.8

Sample Name	CCB	Data File Name	018SMPL.D
DataPath	D:\ICPMH\1\DATA\6-13-14.B	Acq Date Time	2014-06-13T13:06:55-05:00
Type	2-CCB	VialNumber	1101
Dilution	1	Comment	
Operator	EScarbrough	ISTDRefDataFileName	002CALB.D
SamplePassFail	Pass	ISTD PassFail	Pass

QC Analyte Table

Element	m/z	ISTD	Tune Step	Meas Value	Units	QC High	QC Flag
Cr	52	45	1	-0.02	ppb	1.1	
Cd	111	115	2	-0.02	ppb	1.1	
Pb	208	209	2	0.00	ppb	1.1	

QC ISTD Table

Element	m/z	Tune Step	CPS	%RSD	Reference CPS	%Recovery	Lower Limit	Upper Limit	QC Flag
Sc	45	1	124162	0.98	121592	102.1	60	125	
Sc	45	2	4219027	0.41	4156932	101.5	60	125	
Y	89	1	762411	0.58	749242	101.8	60	125	
Y	89	2	6673488	0.51	6404370	104.2	60	125	
In	115	1	979889	0.52	962799	101.8	60	125	
In	115	2	6288051	0.39	6043730	104.0	60	125	
Tb	159	2	7735455	0.39	7586916	102.0	60	125	
Ho	165	2	7267659	0.33	7204379	100.9	60	125	
Bi	209	1	2228339	0.16	2180407	102.2	60	125	
Bi	209	2	4398088	0.24	4312996	102.0	60	125	

TuneStep	TuneFile
1	he.u
2	nogas.u

6-13-14
(5)

Sample Report

Sample Name 0.5 ppb (LLCV)	Data File Name 019SMPL.D
DataPath D:\ICPMH\1\DATA\6-13-14.B	AcqDate 6/13/2014 13:13
Type Sample	VialNumber 1102
Dilution 1	Comment
Operator EScarbrough	ISTDRefDataFileName 002CALB.D
SamplePassFail Pass	ISTD PassFail Pass

QC Analyte Table

Element	m/z	ISTD	Tune Step	Meas Value	FinalConcentration	Units	High Value	QC Flag
Cr	52	45	1	0.44	0.44	ppb	450	
Cd	111	115	2	0.44	0.44	ppb	450	
Pb	208	209	2	0.48	0.48	ppb	450	

QC ISTD Table

Element	m/z	Tune Step	CPS	%RSD	Reference CPS	%Recovery	Lower Limit	Upper Limit	QC Flag
Sc	45	1	124909	0.40	121592	102.7	60	125	
Sc	45	2	4226159	0.48	4156932	101.7	60	125	
Y	89	1	764150	0.69	749242	102.0	60	125	
Y	89	2	6721090	0.28	6404370	104.9	60	125	
In	115	1	973679	0.17	962799	101.1	60	125	
In	115	2	6276977	0.63	6043730	103.9	60	125	
Tb	159	2	7621790	0.23	7586916	100.5	60	125	
Ho	165	2	7201912	1.00	7204379	100.0	60	125	
Bi	209	1	2203625	0.79	2180407	101.1	60	125	
Bi	209	2	4351974	0.78	4312996	100.9	60	125	

TuneStep	TuneFile
1	he.u
2	nogas.u

6-13-14
(B)

Continuing Calibration Verification (CCV) - US EPA Method 200.8

Sample Name CCV
DataPathName D:\ICPMH\1\DATA\6-13-14.B
Type 2-CCV
Dilution 1
Operator EScarbrough
SamplePassFail Pass

Data File Name 020SMPL.D
AcqDate 6/13/2014 13:20
VialNumber 1105
Comment
ISTD Ref File 002CALB.D
ISTD PassFail Pass

QC Analyte Table

Element	m/z	ISTD	TuneStep	Meas Value	Units	ExpValue	%Rec	QC1 Low	QC1 High	QC2 Low	QC2 High	QC Flag
Cr	52	45	1	93.75	ppb	100	93.8	85	115	90	110	
Cd	111	115	2	96.52	ppb	100	96.5	85	115	90	110	
Pb	208	209	2	105.63	ppb	100	105.6	85	115	90	110	

QC ISTD Table

Element	m/z	Tune Step	CPS	%RSD	Reference CPS	%Rec	Lower Limit	Upper Limit	QC Flag
Sc	45	1	123945	0.63	121592	101.9	60	125	
Sc	45	2	4089822	4.40	4156932	98.4	60	125	
Y	89	1	763779	0.10	749242	101.9	60	125	
Y	89	2	6509223	3.84	6404370	101.6	60	125	
In	115	1	970853	0.61	962799	100.8	60	125	
In	115	2	6106962	3.83	6043730	101.0	60	125	
Tb	159	2	7398105	4.10	7586916	97.5	60	125	
Ho	165	2	6904082	3.12	7204379	95.8	60	125	
Bi	209	1	2181582	0.58	2180407	100.1	60	125	
Bi	209	2	4224408	2.02	4312996	97.9	60	125	

TuneStep	TuneFile
1	he.u
2	nogas.u

6-13-14
(B)

Continuing Calibration Verification (CCV) - US EPA Method 200.8

Sample Name SCP Science (100)
DataPathName D:\ICPMH\1\DATA\6-13-14.B
Type 2-CCV
Dilution 1
Operator EScarbrough
SamplePassFail Pass

Data File Name 021SMPL.D
AcqDate 6/13/2014 13:27
VialNumber 1301
Comment
ISTD Ref File 002CALB.D
ISTD PassFail Pass

QC Analyte Table

Element	m/z	ISTD	TuneStep	Meas Value	Units	ExpValue	%Rec	QC1 Low	QC1 High	QC2 Low	QC2 High	QC Flag
Cr	52	45	1	91.47	ppb	100	91.5	85	115	90	110	
Cd	111	115	2	92.52	ppb	100	92.5	85	115	90	110	
Pb	208	209	2	100.84	ppb	100	100.8	85	115	90	110	

QC ISTD Table

Element	m/z	Tune Step	CPS	%RSD	Reference CPS	%Rec	Lower Limit	Upper Limit	QC Flag
Sc	45	1	124768	0.39	121592	102.6	60	125	
Sc	45	2	4216220	0.61	4156932	101.4	60	125	
Y	89	1	764197	0.54	749242	102.0	60	125	
Y	89	2	6721385	0.36	6404370	104.9	60	125	
In	115	1	969855	0.17	962799	100.7	60	125	
In	115	2	6259687	0.59	6043730	103.6	60	125	
Tb	159	2	7581675	0.31	7586916	99.9	60	125	
Ho	165	2	7172366	0.79	7204379	99.6	60	125	
Bi	209	1	2211754	0.60	2180407	101.4	60	125	
Bi	209	2	4324467	0.44	4312996	100.3	60	125	

TuneStep	TuneFile
1	he.u
2	nogas.u

6-13-14
(B)

TCLP Extraction Worksheet

Digestion Set Number: 14-097

TCLP Extraction Date: 9-29-14

Scientist(s): LS, MP, ES

Bench #	63940	63940ap	63941	63942	63943	63944
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Preliminary Evaluations

% Solids	100	100	100	100	100	100
Particle Reduction?	No	No	No	No	No	No
Subsample Weight (g)	5.02	5.02	5.03	5.02	5.02	5.01
Initial pH	11	11	10	11	11	11
pH after HCL & Heat	7	7	—	—	—	—
Extraction Fluid	# 2	# 2	# 2	# 2	# 2	# 2

Tumbling Process

Sample Weight (g)	100.2	100.2	100.5	100.5	100.3	100.1
Ext. Fluid Weight (g)	2000	2000	2000	2000	2000	2000
Start Time	1437	1437	1437	1437	1437	1437
Vent?	Yes	Yes	Yes	Yes	Yes	Yes
End Time	0937	0937	0937	0937	0937	0937
Total Hours	19	19	19	19	19	19

Filtration

Extract pH	6	6	6	6	6	6
Volume Filtered (ml)	100	100	100	100	100	100
Preserved?	Yes	Yes	Yes	Yes	Yes	Yes
Date Digested	10-1-14	10-1-14	10-1-14	10-1-14	10-1-14	10-1-14

Comments

Metals Digestion Worksheet

Digestion Set Number 14-097

Date Digested 10-1-14

Scientist MP/ks

Sample Type: ☒ Water ☐ Sediment ☐ Fish ☐ Other

Digestion Method ☒ 200.2 ☐ 3050 ☐ 245.1 ☐ Other

Bench# / Analysis

63940	Na	Mg	Al	K	Cr	Mn	Fe	Co	Ni	Cu	Zn	As	Se	Ag	Cd	Ba	Hg	Pb	Other
63940DP	Na	Mg	Al	K	Cr	Mn	Fe	Co	Ni	Cu	Zn	As	Se	Ag	Cd	Ba	Hg	Pb	Other
63941	Na	Mg	Al	K	Cr	Mn	Fe	Co	Ni	Cu	Zn	As	Se	Ag	Cd	Ba	Hg	Pb	Other
63942	Na	Mg	Al	K	Cr	Mn	Fe	Co	Ni	Cu	Zn	As	Se	Ag	Cd	Ba	Hg	Pb	Other
63943	Na	Mg	Al	K	Cr	Mn	Fe	Co	Ni	Cu	Zn	As	Se	Ag	Cd	Ba	Hg	Pb	Other
63944	Na	Mg	Al	K	Cr	Mn	Fe	Co	Ni	Cu	Zn	As	Se	Ag	Cd	Ba	Hg	Pb	Other
63944MS	Na	Mg	Al	K	Cr	Mn	Fe	Co	Ni	Cu	Zn	As	Se	Ag	Cd	Ba	Hg	Pb	Other
63944MSD	Na	Mg	Al	K	Cr	Mn	Fe	Co	Ni	Cu	Zn	As	Se	Ag	Cd	Ba	Hg	Pb	Other
	Na	Mg	Al	K	Cr	Mn	Fe	Co	Ni	Cu	Zn	As	Se	Ag	Cd	Ba	Hg	Pb	Other
	Na	Mg	Al	K	Cr	Mn	Fe	Co	Ni	Cu	Zn	As	Se	Ag	Cd	Ba	Hg	Pb	Other

Volume

Bench #	63940	63940DP	63941	63942	63943	63944	63944MS	63944MSD		
Initial Volume: g	50	50	50	50	50	50	50	50		
Final Volume: ml	50	50	50	50	50	50	50	50		

Quality Control

	LRB	LFB	LLFB	QCS/CRM	Matrix Spike
Spike Standard		500 µl SP			500 µl SP
Spike Conc.		100 ppb			100 ppb

Digestion

Digestion Tube Lot #	Hot Block Temperature	Start Time	End Time
1309222	95°C	0915	1430

Comments TCLP

Charge Code 3700

ANALYSIS CHECKLIST

Run Date: 10-2-14

Analyst: ES

ANALYTES

Ag Al As Ba Cd Cr Cu Fe Mn Ni Pb Se Zn

Other: _____

QC RESULTS

QC Parameter	Included?	Within Limits?
CCB	✓	✓
LRB	✓	✓
LFB	✓	✓
Matrix Spike (LFM1)	—	—
Matrix Spike Dup (LFMDUP)	—	—

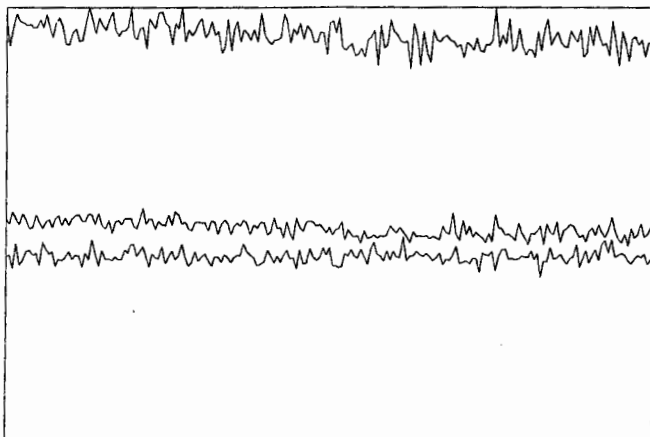
Analyte	QCS True Value	QCS Obtained Value	Within Limits?
CCV - Cr	100	95.6	✓
Cd	100	97.1	✓
Pb	100	105.8	✓
SCP - Cr	100	93.8	✓
Cd	100	93.0	✓
Pb	100	101.5	✓

SAMPLES ANALYZED

63940 1:10	63945 1:10	
63940 Dup 1:10	63946 1:10	
63941 1:10	63947 1:10	
63942 1:10	63948 1:10	
63943 1:10	63945 Dup 1:10	
63944 1:10		

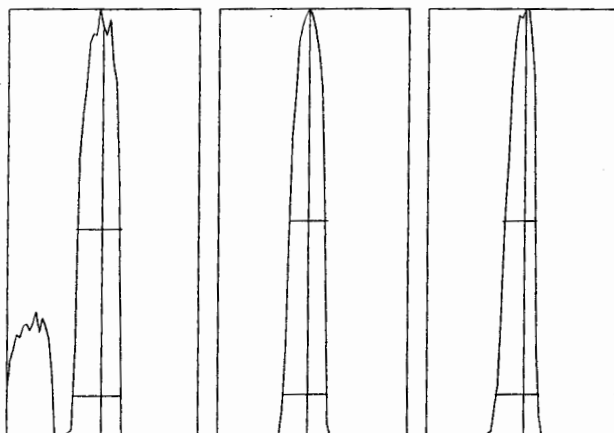
Tune Report

Tune File : nogas.u
Comment : 10-02-14



Integration Time: 0.1000 sec
Sampling Period: 0.3100 sec
n: 200
Oxide: 156/140 1.167%
Doubly Charged: 70/140 1.584%

m/z	Range	Count	Mean	RSD%	Background
7	5,000	2085.0	2139.5	3.65	8.90
89	10,000	9165.0	9355.1	3.14	10.80
205	10,000	4830.0	4950.1	3.78	34.00



m/z:	7	89	205
Height:	2,090	9,484	4,868
Axis:	7.00	88.95	205.05
W-50%:	0.70	0.60	0.55
W-10%:	0.7500	0.700	0.700

Integration Time: 0.1000 sec
Acquisition Time: 22.7600 sec

Y axis : Linear

Tune Report

Tune File : nogas.u
Comment : 10-02-14

Tuning Parameters

===Plasma Condition===

RF Power : 1550 W
RF Matching : 1.8 V
Smpl Depth : 8 mm
Torch-H : -0.4 mm
Torch-V : -0.2 mm
Carrier Gas : 0.75 L/min
Dilution Mode : OFF
Makeup Gas : 0.1 L/min
Optional Gas : --- %
Nebulizer Pump : 0.1 rps
Sample Pump : --- rps
S/C Temp : 2 degC

===Ion Lenses===

Extract 1 : 0 V
Extract 2 : -200 V
Omega Bias : -90 V
Omega Lens : 10 V
Cell Entrance : -40 V
Cell Exit : -60 V
Deflect : 14.2 V
Plate Bias : -40 V
===Octopole Parameters===
OctP RF : 170 V
OctP Bias : -8 V

===Q-Pole Parameters===

AMU Gain : 141
AMU Offset : 127
Axis Gain : 1.0015
Axis Offset : 0.01
QP Bias : -3 V

===Detector Parameters===

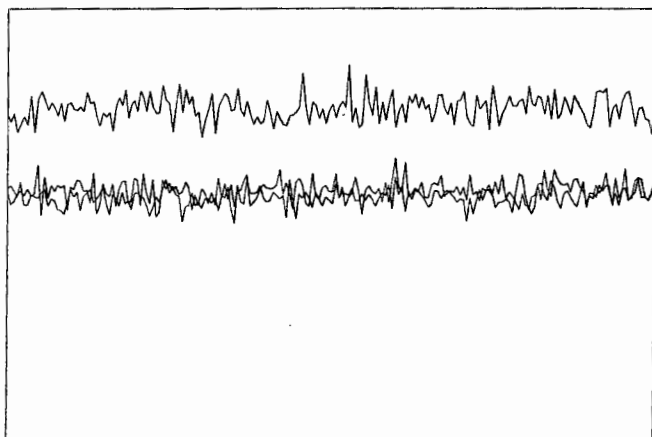
Discriminator : 4.5 mV
Analog HV : 1867 V
Pulse HV : 1680 V

===Reaction Cell===

Reaction Mode : OFF
H2 Gas : --- mL/min
He Gas : 0 mL/min
Optional Gas : --- %

Tune Report

Tune File : he.u
Comment : 10-02-14



Integration Time: 0.1000 sec
Sampling Period: 0.3100 sec
n: 200
Oxide: 156/140 0.492%
Doubly Charged: 70/140 1.093%

m/z	Range	Count	Mean	RSD%	Background
59	2,000	1584.0	1544.1	3.69	0.20
89	2,000	1208.0	1167.0	4.16	0.80
205	5,000	2926.0	2837.3	3.44	2.00

Tuning Parameters

===Plasma Condition===

RF Power : 1550 W
RF Matching : 1.8 V
Smpl Depth : 8 mm
Torch-H : -0.4 mm
Torch-V : -0.2 mm
Carrier Gas : 0.75 L/min
Dilution Mode : OFF
Makeup Gas : 0.1 L/min
Optional Gas : --- %
Nebulizer Pump : 0.1 rps
Sample Pump : --- rps
S/C Temp : 2 degC

===Ion Lenses===

Extract 1 : 0 V
Extract 2 : -200 V
Omega Bias : -90 V
Omega Lens : 10 V
Cell Entrance : -40 V
Cell Exit : -60 V
Deflect : 1.4 V
Plate Bias : -60 V
===Octopole Parameters===
OctP RF : 170 V
OctP Bias : -18 V

===Q-Pole Parameters===

AMU Gain : 141
AMU Offset : 127
Axis Gain : 1.0015
Axis Offset : 0.01
QP Bias : -15 V

===Detector Parameters===

Discriminator : 4.5 mV
Analog HV : 1867 V
Pulse HV : 1680 V

===Reaction Cell===

Reaction Mode : ON
H2 Gas : --- mL/min
He Gas : 4.3 mL/min
Optional Gas : --- %

P/A Factor Tuning Report

Acquired: Oct 2 2014 09:58 am

Mass [amu]	Element	P/A Factor
45	Sc	0.139470
52	Cr	0.143967
53	Cr	0.144165
89	Y	0.152074
106	Cd	Sensitivity too low
108	Cd	Sensitivity too low
111	Cd	0.161310
114	Cd	0.160065
115	In	0.159722
118	(In)	Sensitivity too low
159	Tb	0.163571
165	Ho	0.164236
206	(Pb)	0.167359
207	(Pb)	0.167829
208	Pb	0.167430
209	Bi	0.167680

===Detector Parameters===

Discriminator: 4.5 mV

Analog HV: 1867 V

Pulse HV: 1680 V

D:\ICPMH\1\7500\qctune.d

QC Tune Report

Data File: D:\ICPMH\1\7500\QCTUNE.D
Date Acquired: 2 Oct 2014 10:09:47 am
Operator:
Misc Info:
Vial Number: 0
Current Method: D:\ICPMH\1\METHODS\TN6020.m

Minimum Response(CPS)

Element	Actual	Required	Flag
---------	--------	----------	------

RSD (%)

Element	Actual	Required	Flag
---------	--------	----------	------

7 Li	0.90	5.00	
59 Co	0.93	5.00	
115 In	1.34	5.00	
205 Tl	1.45	5.00	

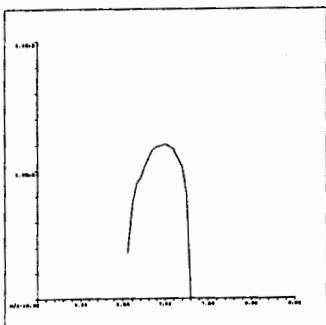
Ion Ratio

Element	Actual	Required	Flag
---------	--------	----------	------

Maximum Bkg. Count(CPS)

Element	Actual	Required	Flag
---------	--------	----------	------

D:\ICPMH\1\7500\qctune.d



7 Li

Mass Calib.

Actual: 7.00

Required: 6.90-7.10

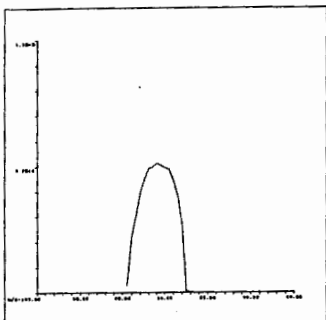
Flag:

Peak Width

Actual: 0.70

Required: 0.75

Flag:



59 Co

Mass Calib.

Actual: 58.90

Required: 58.90-59.10

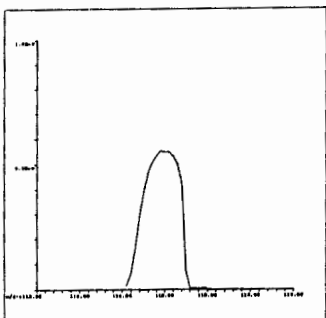
Flag:

Peak Width

Actual: 0.60

Required: 0.75

Flag:



115 In

Mass Calib.

Actual: 115.00

Required: 114.90-115.10

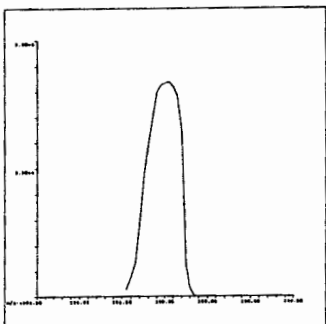
Flag:

Peak Width

Actual: 0.60

Required: 0.75

Flag:



205 Tl

Mass Calib.

Actual: 205.00

Required: 204.90-205.10

Flag:

Peak Width

Actual: 0.60

Required: 0.75

Flag:

QC Tune Result:Pass

D:\ICPMH\1\7500\qctune.d

Replicated Data: Tune #1

Mass Count (CPS)

7	76083.46	75337.15	75879.26	74877.12	75251.16
59	27119.27	27564.43	27506.12	27297.57	27836.38
115	2788266.00	2855546.00	2833338.00	2828205.00	2834431.00
205	19620.92	20344.93	20238.63	20054.79	19942.97

Calibration Blank Report

Sample Name Cal blank
DataPath D:\ICPMH\1\DATA\10-02-14.B
Type CalBlk
Dilution 1

Data File Name 001CALB.D
AcqDate 10/2/2014 10:42
VialNumber 1101
Comment

QC Analyte Table

Element	m/z	ISTD	Tune Step	CPS	%RSD
Cr	52	45	1	1553	3.83
Cd	111	115	2	223	8.16
Pb	208	209	2	2329	3.92

QC ISTD Table

Element	m/z	Tune Step	CPS	%RSD
Sc	45	1	141722	2.81
Sc	45	2	4774495	0.67
Y	89	1	753313	3.09
Y	89	2	6642097	0.54
In	115	1	894694	2.82
In	115	2	5845977	0.10
Tb	159	2	6910924	0.85
Ho	165	2	6399922	0.32
Bi	209	1	1830774	2.18
Bi	209	2	3667715	0.33

TuneStep	TuneFile
1	he.u
2	nogas.u

Calibration Blank Report

Sample Name Cal blank
DataPath D:\ICPMH\1\DATA\10-02-14.B
Type CalBlk
Dilution 1

Data File Name 002CALB.D
AcqDate 10/2/2014 10:49
VialNumber 1101
Comment

QC Analyte Table

Element	m/z	ISTD	Tune Step	CPS	%RSD
Cr	52	45	1	1462	8.44
Cd	111	115	2	208	9.94
Pb	208	209	2	1881	3.10

QC ISTD Table

Element	m/z	Tune Step	CPS	%RSD
Sc	45	1	157012	2.04
Sc	45	2	4724478	1.07
Y	89	1	834924	1.86
Y	89	2	6574046	2.01
In	115	1	995641	1.82
In	115	2	5806836	1.93
Tb	159	2	6807162	0.90
Ho	165	2	6345752	1.20
Bi	209	1	1942224	1.92
Bi	209	2	3595552	1.98

TuneStep	TuneFile
1	he.u
2	nogas.u

Calibration Standard Report

Sample Name 0.5 ppb
DataPath D:\ICPMH\1\DATA\10-02-14.B
Type CalStd
Dilution 1
Operator MPyles

Data File Name 001CALS.D
AcqDate 10/2/2014 10:55
VialNumber 1102
Comment
ISTDRefDataFileName 002CALB.D

QC Analyte Table

Element	m/z	ISTD	Tune Step	CPS	%RSD
Cr	52	45	1	5594	1.63
Cd	111	115	2	3881	3.55
Pb	208	209	2	17390	1.12

QC ISTD Table

Element	m/z	Tune Step	CPS	%RSD	Reference CPS	%Recovery	Lower Limit	Upper Limit	QC Flag
Sc	45	1	155633	0.62	157012	99.1	60	125	
Sc	45	2	5004646	2.11	4724478	105.9	60	125	
Y	89	1	827514	0.45	834924	99.1	60	125	
Y	89	2	6997372	1.56	6574046	106.4	60	125	
In	115	1	978595	0.13	995641	98.3	60	125	
In	115	2	6142952	1.89	5806836	105.8	60	125	
Tb	159	2	7204762	1.78	6807162	105.8	60	125	
Ho	165	2	6663917	1.61	6345752	105.0	60	125	
Bi	209	1	1915276	0.53	1942224	98.6	60	125	
Bi	209	2	3823961	1.86	3595552	106.4	60	125	

TuneStep	TuneFile
1	he.u
2	nogas.u

Calibration Standard Report

Sample Name 1.0 ppb
DataPath D:\ICPMH\1\DATA\10-02-14.B
Type CalStd
Dilution 1
Operator MPyles

Data File Name 002CALS.D
AcqDate 10/2/2014 11:02
VialNumber 1103
Comment
ISTDRefDataFileName 002CALB.D

QC Analyte Table

Element	m/z	ISTD	Tune Step	CPS	%RSD
Cr	52	45	1	11077	0.69
Cd	111	115	2	8226	0.55
Pb	208	209	2	35805	0.15

QC ISTD Table

Element	m/z	Tune Step	CPS	%RSD	Reference CPS	%Recovery	Lower Limit	Upper Limit	QC Flag
Sc	45	1	157145	0.28	157012	100.1	60	125	
Sc	45	2	4911206	0.91	4724478	104.0	60	125	
Y	89	1	828622	0.48	834924	99.2	60	125	
Y	89	2	6795743	0.34	6574046	103.4	60	125	
In	115	1	985487	0.85	995641	99.0	60	125	
In	115	2	6039868	0.57	5806836	104.0	60	125	
Tb	159	2	7073916	0.76	6807162	103.9	60	125	
Ho	165	2	6564855	0.18	6345752	103.5	60	125	
Bi	209	1	1939631	1.91	1942224	99.9	60	125	
Bi	209	2	3744952	0.40	3595552	104.2	60	125	

TuneStep	TuneFile
1	he.u
2	nogas.u

Calibration Standard Report

Sample Name 10.0 ppb
DataPath D:\ICPMH\1\DATA\10-02-14.B
Type CalStd
Dilution 1
Operator MPyles

Data File Name 003CAL.S.D
AcqDate 10/2/2014 11:09
VialNumber 1104
Comment
ISTDRefDataFileName 002CALB.D

QC Analyte Table

Element	m/z	ISTD	Tune Step	CPS	%RSD
Cr	52	45	1	88273	1.40
Cd	111	115	2	73196	0.91
Pb	208	209	2	316513	0.41

QC ISTD Table

Element	m/z	Tune Step	CPS	%RSD	Reference CPS	%Recovery	Lower Limit	Upper Limit	QC Flag
Sc	45	1	158526	1.29	157012	101.0	60	125	
Sc	45	2	5145147	1.75	4724478	108.9	60	125	
Y	89	1	849258	1.04	834924	101.7	60	125	
Y	89	2	7229717	1.68	6574046	110.0	60	125	
In	115	1	1014176	1.51	995641	101.9	60	125	
In	115	2	6374115	2.09	5806836	109.8	60	125	
Tb	159	2	7452521	1.65	6807162	109.5	60	125	
Ho	165	2	6945594	2.55	6345752	109.5	60	125	
Bi	209	1	2007809	2.56	1942224	103.4	60	125	
Bi	209	2	4041049	2.85	3595552	112.4	60	125	

TuneStep	TuneFile
1	he.u
2	nogas.u

Calibration Standard Report

Sample Name 100 ppb
DataPath D:\ICPMH\1\DATA\10-02-14.B
Type CalStd
Dilution 1
Operator MPyles
Data File Name 004CALS.D
AcqDate 10/2/2014 11:16
VialNumber 1105
Comment
ISTDRefDataFileName 002CALB.D

QC Analyte Table

Element	m/z	ISTD	Tune Step	CPS	%RSD
Cr	52	45	1	901305	0.40
Cd	111	115	2	755900	0.58
Pb	208	209	2	3382539	1.06

QC ISTD Table

Element	m/z	Tune Step	CPS	%RSD	Reference CPS	%Recovery	Lower Limit	Upper Limit	QC Flag
Sc	45	1	156386	0.66	157012	99.6	60	125	
Sc	45	2	4959767	0.64	4724478	105.0	60	125	
Y	89	1	838271	0.39	834924	100.4	60	125	
Y	89	2	6976752	0.35	6574046	106.1	60	125	
In	115	1	1003419	0.22	995641	100.8	60	125	
In	115	2	6209241	1.10	5806836	106.9	60	125	
Tb	159	2	7198341	0.45	6807162	105.7	60	125	
Ho	165	2	6714803	0.99	6345752	105.8	60	125	
Bi	209	1	1996045	0.37	1942224	102.8	60	125	
Bi	209	2	3878361	1.40	3595552	107.9	60	125	

TuneStep	TuneFile
1	he.u
2	nogas.u

Calibration Standard Report

Sample Name 200 ppb
DataPath D:\ICPMH\1\DATA\10-02-14.B
Type CalStd
Dilution 1
Operator MPyles

Data File Name 005CAL.S.D
AcqDate 10/2/2014 11:23
VialNumber 1106
Comment
ISTDRefDataFileName 002CAL.B.D

QC Analyte Table

Element	m/z	ISTD	Tune Step	CPS	%RSD
Cr	52	45	1	1994766	2.05
Cd	111	115	2	1687523	0.45
Pb	208	209	2	7046892	0.47

QC ISTD Table

Element	m/z	Tune Step	CPS	%RSD	Reference CPS	%Recovery	Lower Limit	Upper Limit	QC Flag
Sc	45	1	156238	0.46	157012	99.5	60	125	
Sc	45	2	5038409	1.23	4724478	106.6	60	125	
Y	89	1	846571	0.28	834924	101.4	60	125	
Y	89	2	7062359	1.03	6574046	107.4	60	125	
In	115	1	1018226	0.73	995641	102.3	60	125	
In	115	2	6346345	0.90	5806836	109.3	60	125	
Tb	159	2	7439369	0.51	6807162	109.3	60	125	
Ho	165	2	6884966	1.06	6345752	108.5	60	125	
Bi	209	1	2052393	2.50	1942224	105.7	60	125	
Bi	209	2	4040614	0.90	3595552	112.4	60	125	

TuneStep	TuneFile
1	he.u
2	nogas.u

Calibration Standard Report

Sample Name 500 ppb
DataPath D:\ICPMH\1\DATA\10-02-14.B
Type CalStd
Dilution 1
Operator MPyles

Data File Name 006CAL.S.D
AcqDate 10/2/2014 11:30
VialNumber 1107
Comment
ISTDRefDataFileName 002CALB.D

QC Analyte Table

Element	m/z	ISTD	Tune Step	CPS	%RSD
Cr	52	45	1	4526105	0.40
Cd	111	115	2	3789983	1.39
Pb	208	209	2	16173865	0.83

QC ISTD Table

Element	m/z	Tune Step	CPS	%RSD	Reference CPS	%Recovery	Lower Limit	Upper Limit	QC Flag
Sc	45	1	152579	0.10	157012	97.2	60	125	
Sc	45	2	4806654	0.30	4724478	101.7	60	125	
Y	89	1	821355	0.58	834924	98.4	60	125	
Y	89	2	6781016	1.07	6574046	103.1	60	125	
In	115	1	989504	0.16	995641	99.4	60	125	
In	115	2	6080811	0.83	5806836	104.7	60	125	
Tb	159	2	7238981	1.26	6807162	106.3	60	125	
Ho	165	2	6690890	1.02	6345752	105.4	60	125	
Bi	209	1	2068345	0.98	1942224	106.5	60	125	
Bi	209	2	3966478	0.35	3595552	110.3	60	125	

TuneStep	TuneFile
1	he.u
2	nogas.u

Sample Report

Sample Name rinse
DataPath D:\ICPMH\1\DATA\10-02-14.B
Type Sample
Dilution 1
Operator MPyles
SamplePassFail Pass

Data File Name 001SMPL.D
AcqDate 10/2/2014 11:36
VialNumber 1303
Comment
ISTDRefDataFileName 002CALB.D
ISTD PassFail Pass

QC Analyte Table

Element	m/z	ISTD	Tune Step	Meas Value	FinalConcentration	Units	High Value	QC Flag
Cr	52	45	1	0.01	0.01	ppb	500	
Cd	111	115	2	-0.01	-0.01	ppb	500	
Pb	208	209	2	0.10	0.10	ppb	500	

QC ISTD Table

Element	m/z	Tune Step	CPS	%RSD	Reference CPS	%Recovery	Lower Limit	Upper Limit	QC Flag
Sc	45	1	157685	1.04	157012	100.4	60	125	
Sc	45	2	4967687	1.03	4724478	105.1	60	125	
Y	89	1	845758	0.35	834924	101.3	60	125	
Y	89	2	6916906	0.08	6574046	105.2	60	125	
In	115	1	1027897	0.61	995641	103.2	60	125	
In	115	2	6220308	0.66	5806836	107.1	60	125	
Tb	159	2	7140365	1.09	6807162	104.9	60	125	
Ho	165	2	6631413	0.91	6345752	104.5	60	125	
Bi	209	1	2095943	0.98	1942224	107.9	60	125	
Bi	209	2	3947462	0.46	3595552	109.8	60	125	

TuneStep	TuneFile
1	he.u
2	nogas.u

Continuing Calibration Blank (CCB) - US EPA Method 200.8

Sample Name CCB
DataPath D:\ICPMH\1\DATA\10-02-14.B
Type 2-CCB
Dilution 1
Operator MPyles
SamplePassFail Pass

Data File Name 002SMPL.D
Acq Date Time 2014-10-02T11:43:43-05:00
VialNumber 1101
Comment
ISTDRefDataFileName 002CALB.D
ISTD PassFail Pass

QC Analyte Table

Element	m/z	ISTD	Tune Step	Meas Value	Units	QC High	QC Flag
Cr	52	45	1	0.01	ppb	1.1	
Cd	111	115	2	0.01	ppb	1.1	
Pb	208	209	2	0.04	ppb	1.1	

QC ISTD Table

Element	m/z	Tune Step	CPS	%RSD	Reference CPS	%Recovery	Lower Limit	Upper Limit	QC Flag
Sc	45	1	155217	0.23	157012	98.9	60	125	
Sc	45	2	4904337	0.14	4724478	103.8	60	125	
Y	89	1	831570	0.35	834924	99.6	60	125	
Y	89	2	6906374	0.02	6574046	105.1	60	125	
In	115	1	991280	0.24	995641	99.6	60	125	
In	115	2	6159773	0.84	5806836	106.1	60	125	
Tb	159	2	7198240	0.34	6807162	105.7	60	125	
Ho	165	2	6694125	0.40	6345752	105.5	60	125	
Bi	209	1	1985014	0.66	1942224	102.2	60	125	
Bi	209	2	3853258	0.71	3595552	107.2	60	125	

TuneStep	TuneFile
1	he.u
2	nogas.u

10-2-14
②

Sample Report

Sample Name 0.5 ppb (LLCV)
DataPath D:\ICPMH\1\DATA\10-02-14.B
Type Sample
Dilution 1
Operator MPyles
SamplePassFail Pass

Data File Name 003SMPL.D
AcqDate 10/2/2014 11:50
VialNumber 1102
Comment
ISTDRefDataFileName 002CALB.D
ISTD PassFail Pass

QC Analyte Table

Element	m/z	ISTD	Tune Step	Meas Value	FinalConcentration	Units	High Value	QC Flag
Cr	52	45	1	0.44	0.44	ppb	500	
Cd	111	115	2	0.48	0.48	ppb	500	
Pb	208	209	2	0.51	0.51	ppb	500	

QC ISTD Table

Element	m/z	Tune Step	CPS	%RSD	Reference CPS	%Recovery	Lower Limit	Upper Limit	QC Flag
Sc	45	1	156520	0.76	157012	99.7	60	125	
Sc	45	2	4965625	0.80	4724478	105.1	60	125	
Y	89	1	837026	0.27	834924	100.3	60	125	
Y	89	2	6960292	0.14	6574046	105.9	60	125	
In	115	1	1001171	0.18	995641	100.6	60	125	
In	115	2	6154644	0.62	5806836	106.0	60	125	
Tb	159	2	7230197	0.52	6807162	106.2	60	125	
Ho	165	2	6741616	0.62	6345752	106.2	60	125	
Bi	209	1	2026674	1.21	1942224	104.3	60	125	
Bi	209	2	3873751	0.62	3595552	107.7	60	125	

TuneStep	TuneFile
1	he.u
2	nogas.u

10-3-14
(15)

Continuing Calibration Verification (CCV) - US EPA Method 200.8

Sample Name CCV
DataPathName D:\ICPMH\1\DATA\10-02-14.B
Type 2-CCV
Dilution 1
Operator MPyles
SamplePassFail Pass

Data File Name 004SMPL.D
AcqDate 10/2/2014 11:57
VialNumber 1105
Comment
ISTD Ref File 002CALB.D
ISTD PassFail Pass

QC Analyte Table

Element	m/z	ISTD	TuneStep	Meas Value	Units	ExpValue	%Rec	QC1 Low	QC1 High	QC2 Low	QC2 High	QC Flag
Cr	52	45	1	95.61	ppb	100	95.6	85	115	90	110	
Cd	111	115	2	97.11	ppb	100	97.1	85	115	90	110	
Pb	208	209	2	105.79	ppb	100	105.8	85	115	90	110	

QC ISTD Table

Element	m/z	Tune Step	CPS	%RSD	Reference CPS	%Rec	Lower Limit	Upper Limit	QC Flag
Sc	45	1	156074	0.21	157012	99.4	60	125	
Sc	45	2	4940537	0.45	4724478	104.6	60	125	
Y	89	1	833068	0.20	834924	99.8	60	125	
Y	89	2	6924146	1.03	6574046	105.3	60	125	
In	115	1	996376	0.55	995641	100.1	60	125	
In	115	2	6185602	1.16	5806836	106.5	60	125	
Tb	159	2	7213396	1.14	6807162	106.0	60	125	
Ho	165	2	6702010	0.86	6345752	105.6	60	125	
Bi	209	1	2011596	0.86	1942224	103.6	60	125	
Bi	209	2	3918952	0.26	3595552	109.0	60	125	

TuneStep	TuneFile
1	he.u
2	nogas.u

10-2-14
15

Continuing Calibration Verification (CCV) - US EPA Method 200.8

Sample Name SCP Science (100)
DataPathName D:\ICPMH\1\DATA\10-02-14.B
Type 2-CCV
Dilution 1
Operator MPyles
SamplePassFail Pass

Data File Name 005SMPL.D
AcqData 10/2/2014 12:04
VialNumber 1301
Comment
ISTD Ref File 002CALB.D
ISTD PassFail Pass

QC Analyte Table

Element	m/z	ISTD	TuneStep	Meas Value	Units	ExpValue	%Rec	QC1 Low	QC1 High	QC2 Low	QC2 High	QC Flag
Cr	52	45	1	93.75	ppb	100	93.8	85	115	90	110	
Cd	111	115	2	92.99	ppb	100	93.0	85	115	90	110	
Pb	208	209	2	101.50	ppb	100	101.5	85	115	90	110	

QC ISTD Table

Element	m/z	Tune Step	CPS	%RSD	Reference CPS	%Rec	Lower Limit	Upper Limit	QC Flag
Sc	45	1	156736	1.79	157012	99.8	60	125	
Sc	45	2	4948974	0.67	4724478	104.8	60	125	
Y	89	1	861909	5.98	834924	103.2	60	125	
Y	89	2	6964805	0.50	6574046	105.9	60	125	
In	115	1	1026505	4.48	995641	103.1	60	125	
In	115	2	6218901	1.12	5806836	107.1	60	125	
Tb	159	2	7248393	0.62	6807162	106.5	60	125	
Ho	165	2	6728901	0.82	6345752	106.0	60	125	
Bi	209	1	2057633	1.38	1942224	105.9	60	125	
Bi	209	2	3926809	0.42	3595552	109.2	60	125	

TuneStep	TuneFile
1	he.u
2	nogas.u

0-3-14
⑥

Sample Report

Sample Name Q POD
DataPath D:\ICPMH\1\DATA\10-02-14.B
Type Sample
Dilution 1
Operator MPyles
SamplePassFail Fail

Data File Name 006SMPL.D
AcqDate 10/2/2014 12:11
VialNumber 2401
Comment
ISTDRefDataFileName 002CALB.D
ISTD PassFail Pass

QC Analyte Table

Element	m/z	ISTD	Tune Step	Meas Value	FinalConcentration	Units	High Value	QC Flag
Cr	52	45	1	-0.02	-0.02	ppb	500	
Cd	111	115	2	-0.02	-0.02	ppb	500	
Pb	208	209	2	0.13	0.13	ppb	500	

QC ISTD Table

Element	m/z	Tune Step	CPS	%RSD	Reference CPS	%Recovery	Lower Limit	Upper Limit	QC Flag
Sc	45	1	159387	2.17	157012	101.5	60	125	
Sc	45	2	5148482	0.22	4724478	109.0	60	125	
Y	89	1	875720	0.34	834924	104.9	60	125	
Y	89	2	7177120	0.66	6574046	109.2	60	125	
In	115	1	1008354	3.35	995641	101.3	60	125	
In	115	2	6290487	1.83	5806836	108.3	60	125	
Tb	159	2	7329085	0.25	6807162	107.7	60	125	
Ho	165	2	6813211	0.33	6345752	107.4	60	125	
Bi	209	1	723858	11.39	1942224	37.3	60	125	IS Fail
Bi	209	2	2008003	5.13	3595552	55.8	60	125	IS Fail

TuneStep	TuneFile
1	he.u
2	nogas.u

Laboratory Reagent Blank (LRB) - US EPA Method 200.8

Sample Name	Method Blank	Data File Name	007SMPL.D
DataPath	D:\ICPMH\1\DATA\10-02-14.B	AcqDate	10/2/2014 12:17
Type	2-LRB	VialNumber	2101
Dilution	1	Comment	
Operator	MPyles	ISTDRefDataFileName	002CALB.D
SamplePassFail	Pass	ISTD PassFail	Pass

QC Analyte Table

Element	m/z	ISTD	Tune Step	Meas Value	Units	QC High	QC Flag
Cr	52	45	1	0.01	ppb	1.1	
Cd	111	115	2	-0.01	ppb	1.1	
Pb	208	209	2	0.70	ppb	1.1	

QC ISTD Table

Element	m/z	Tune Step	CPS	%RSD	Reference CPS	%Recovery	Lower Limit	Upper Limit	QC Flag
Sc	45	1	167078	0.97	157012	106.4	60	125	
Sc	45	2	5348403	0.50	4724478	113.2	60	125	
Y	89	1	894124	0.27	834924	107.1	60	125	
Y	89	2	7451912	0.65	6574046	113.4	60	125	
In	115	1	1071055	0.36	995641	107.6	60	125	
In	115	2	6573934	0.46	5806836	113.2	60	125	
Tb	159	2	7759521	1.02	6807162	114.0	60	125	
Ho	165	2	7272978	0.77	6345752	114.6	60	125	
Bi	209	1	2160649	1.03	1942224	111.2	60	125	
Bi	209	2	4230946	0.38	3595552	117.7	60	125	

TuneStep	TuneFile	TuneDate
1	he.u	10/2/2014 12:16:00 PM
2	nogas.u	10/2/2014 12:16:00 PM

0-3-14
⑤

Laboratory Reagent Blank (LRB) - US EPA Method 200.8

Sample Name	LRB	Data File Name	008SMPL.D
DataPath	D:\ICPMH\1\DATA\10-02-14.B	AcqDate	10/2/2014 12:24
Type	2-LRB	VialNumber	2102
Dilution	1	Comment	
Operator	MPyles	ISTDRefDataFileName	002CALB.D
SamplePassFail	Pass	ISTD PassFail	Pass

QC Analyte Table

Element	m/z	ISTD	Tune Step	Meas Value	Units	QC High	QC Flag
Cr	52	45	1	-0.01	ppb	1.1	
Cd	111	115	2	-0.01	ppb	1.1	
Pb	208	209	2	0.02	ppb	1.1	

QC ISTD Table

Element	m/z	Tune Step	CPS	%RSD	Reference CPS	%Recovery	Lower Limit	Upper Limit	QC Flag
Sc	45	1	163118	7.96	157012	103.9	60	125	
Sc	45	2	5074868	0.82	4724478	107.4	60	125	
Y	89	1	885867	10.88	834924	106.1	60	125	
Y	89	2	7131475	0.60	6574046	108.5	60	125	
In	115	1	1064946	11.33	995641	107.0	60	125	
In	115	2	6330876	0.36	5806836	109.0	60	125	
Tb	159	2	7338816	0.52	6807162	107.8	60	125	
Ho	165	2	6807208	1.13	6345752	107.3	60	125	
Bi	209	1	2104090	7.89	1942224	108.3	60	125	
Bi	209	2	3993158	0.23	3595552	111.1	60	125	

TuneStep	TuneFile	TuneDate
1	he.u	10/2/2014 12:22:00 PM
2	nogas.u	10/2/2014 12:22:00 PM

10-3-14
⑤

Laboratory Fortified Blank (LFB) - US EPA Method 200.8

Sample Name LFB
DataPath D:\ICPMH\1\DATA\10-02-14.B
Type 2-LFB
Dilution 1
Operator MPyles
SamplePassFail Pass

Data File Name 009SMPL.D
AcqDate 10/2/2014 12:31
VialNumber 2103
Comment
ISTDRefDataFileName 002CALB.D
ISTD PassFail Pass

QC Analyte Table

Element	m/z	ISTD	Tune Step	Conc.	Units	Spike Amt	%Recovery	%QC Low	%QC High	QC Flag
Cr	52	45	1	94.75	ppb	100	94.8	85	115	
Cd	111	115	2	93.74	ppb	100	93.8	85	115	
Pb	208	209	2	103.09	ppb	100	103.1	85	115	

QC ISTD Table

Element	m/z	Tune Step	CPS	%RSD	Reference CPS	%Recovery	Lower Limiy	Upper Limit	QC Flag
Sc	45	1	162904	1.70	157012	103.8	60	125	
Sc	45	2	5134897	1.01	4724478	108.7	60	125	
Y	89	1	857472	0.86	834924	102.7	60	125	
Y	89	2	7159125	0.57	6574046	108.9	60	125	
In	115	1	1031810	0.41	995641	103.6	60	125	
In	115	2	6430126	0.14	5806836	110.7	60	125	
Tb	159	2	7471833	0.83	6807162	109.8	60	125	
Ho	165	2	6952255	0.70	6345752	109.6	60	125	
Bi	209	1	2105744	0.49	1942224	108.4	60	125	
Bi	209	2	4068260	0.96	3595552	113.1	60	125	

TuneStep	TuneFile
1	he.u
2	nogas.u

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Sample Report

Sample Name	aa63940 1:10	Data File Name	010SMPL.D
DataPath	D:\ICPMH\1\DATA\10-02-14.B	AcqDate	10/2/2014 12:38
Type	Sample	VialNumber	2104
Dilution	1	Comment	
Operator	MPyles	ISTDRefDataFileName	002CALB.D
SamplePassFail	Pass	ISTD PassFail	Pass

QC Analyte Table

Element	m/z	ISTD	Tune Step	Meas Value	FinalConcentration	Units	High Value	QC Flag
Cr	52	45	1	19.30	19.30	ppb	500	
Cd	111	115	2	164.16	164.16	ppb	500	
Pb	208	209	2	1.05	1.05	ppb	500	

QC ISTD Table

Element	m/z	Tune Step	CPS	%RSD	Reference CPS	%Recovery	Lower Limit	Upper Limit	QC Flag
Sc	45	1	169133	7.78	157012	107.7	60	125	
Sc	45	2	5244638	2.51	4724478	111.0	60	125	
Y	89	1	924461	11.70	834924	110.7	60	125	
Y	89	2	7205941	2.73	6574046	109.6	60	125	
In	115	1	1106843	10.56	995641	111.2	60	125	
In	115	2	6352666	1.92	5806836	109.4	60	125	
Tb	159	2	7374469	2.84	6807162	108.3	60	125	
Ho	165	2	6889999	3.19	6345752	108.6	60	125	
Bi	209	1	2095137	8.21	1942224	107.9	60	125	
Bi	209	2	3944443	3.38	3595552	109.7	60	125	

TuneStep	TuneFile
1	he.u
2	nogas.u

Chromium

$$19.30 \times 10 = 193$$

Cadmium

$$164.16 \times 10 = 1641.6 = 1640$$

Lead

$$1.05 \times 10 = 10.5$$

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Sample Report

Sample Name aa63940 Dup 1:10
DataPath D:\ICPMH\1\DATA\10-02-14.B
Type Sample
Dilution 1
Operator MPyles
SamplePassFail Pass

Data File Name 011SMPL.D
AcqDate 10/2/2014 12:45
VialNumber 2105
Comment
ISTDRefDataFileName 002CALB.D
ISTD PassFail Pass

QC Analyte Table

Element	m/z	ISTD	Tune Step	Meas Value	FinalConcentration	Units	High Value	QC Flag
Cr	52	45	1	21.63	21.63	ppb	500	
Cd	111	115	2	190.66	190.66	ppb	500	
Pb	208	209	2	0.72	0.72	ppb	500	

QC ISTD Table

Element	m/z	Tune Step	CPS	%RSD	Reference CPS	%Recovery	Lower Limit	Upper Limit	QC Flag
Sc	45	1	165338	0.65	157012	105.3	60	125	
Sc	45	2	5257480	19.88	4724478	111.3	60	125	
Y	89	1	873193	0.44	834924	104.6	60	125	
Y	89	2	7292505	19.75	6574046	110.9	60	125	
In	115	1	1046198	0.18	995641	105.1	60	125	
In	115	2	6465669	21.12	5806836	111.3	60	125	
Tb	159	2	7391255	19.56	6807162	108.6	60	125	
Ho	165	2	6937001	19.78	6345752	109.3	60	125	
Bi	209	1	2081419	0.26	1942224	107.2	60	125	
Bi	209	2	3958572	20.15	3595552	110.1	60	125	

TuneStep	TuneFile
1	he.u
2	nogas.u

Chromium

$$21.63 \times 10 = 216.3 = \textcircled{216}$$

Cadmium

$$190.66 \times 10 = 1906.6 = \textcircled{1910}$$

Lead

$$0.72 \times 10 = \textcircled{7.20}$$

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Sample Report

Sample Name aa63941 1:10
DataPath D:\ICPMH\1\DATA\10-02-14.B
Type Sample
Dilution 1
Operator MPyles
SamplePassFail Pass

Data File Name 012SMPL.D
AcqDate 10/2/2014 12:51
VialNumber 2106
Comment
ISTDRefDataFileName 002CALB.D
ISTD PassFail Pass

QC Analyte Table

Element	m/z	ISTD	Tune Step	Meas Value	FinalConcentration	Units	High Value	QC Flag
Cr	52	45	1	32.51	32.51	ppb	500	
Cd	111	115	2	311.43	311.43	ppb	500	
Pb	208	209	2	0.80	0.80	ppb	500	

QC ISTD Table

Element	m/z	Tune Step	CPS	%RSD	Reference CPS	%Recovery	Lower Limit	Upper Limit	QC Flag
Sc	45	1	169474	0.61	157012	107.9	60	125	
Sc	45	2	5347364	0.52	4724478	113.2	60	125	
Y	89	1	900006	0.51	834924	107.8	60	125	
Y	89	2	7438310	0.14	6574046	113.1	60	125	
In	115	1	1069902	0.44	995641	107.5	60	125	
In	115	2	6416826	0.99	5806836	110.5	60	125	
Tb	159	2	7414304	0.85	6807162	108.9	60	125	
Ho	165	2	6874887	0.47	6345752	108.3	60	125	
Bi	209	1	2082613	0.58	1942224	107.2	60	125	
Bi	209	2	3922166	0.57	3595552	109.1	60	125	

TuneStep	TuneFile
1	he.u
2	nogas.u

Chromium

$$32.51 \times 10 = 325.1 = \textcircled{325}$$

Cadmium

$$311.43 \times 10 = 3114.3 = \textcircled{3110}$$

Lead

$$0.80 \times 10 = \textcircled{8.00}$$

0-3-14
⑤

Sample Report

Sample Name aa63942 1:10
DataPath D:\ICPMH\1\DATA\10-02-14.B
Type Sample
Dilution 1
Operator MPyles
SamplePassFail Pass

Data File Name 013SMPL.D
AcqDate 10/2/2014 12:58
VialNumber 2107
Comment
ISTDRefDataFileName 002CALB.D
ISTD PassFail Pass

QC Analyte Table

Element	m/z	ISTD	Tune Step	Meas Value	FinalConcentration	Units	High Value	QC Flag
Cr	52	45	1	30.61	30.61	ppb	500	
Cd	111	115	2	355.30	355.30	ppb	500	
Pb	208	209	2	1.27	1.27	ppb	500	

QC ISTD Table

Element	m/z	Tune Step	CPS	%RSD	Reference CPS	%Recovery	Lower Limit	Upper Limit	QC Flag
Sc	45	1	167687	0.55	157012	106.8	60	125	
Sc	45	2	5320318	1.06	4724478	112.6	60	125	
Y	89	1	923534	6.18	834924	110.6	60	125	
Y	89	2	7295422	0.94	6574046	111.0	60	125	
In	115	1	1097127	4.42	995641	110.2	60	125	
In	115	2	6428326	0.92	5806836	110.7	60	125	
Tb	159	2	7464184	0.48	6807162	109.7	60	125	
Ho	165	2	6894607	0.58	6345752	108.6	60	125	
Bi	209	1	2080670	0.83	1942224	107.1	60	125	
Bi	209	2	3968455	0.80	3595552	110.4	60	125	

TuneStep	TuneFile
1	he.u
2	nogas.u

Chromium

$$30.61 \times 10 = 306.1 = \textcircled{306}$$

Cadmium

$$355.30 \times 10 = 3553 = \textcircled{3550}$$

Lead

$$1.27 \times 10 = \textcircled{12.7}$$

3-14
⑥

Sample Report

Sample Name	aa63943 1:10	Data File Name	014SMPL.D
DataPath	D:\ICPMH\1\DATA\10-02-14.B	AcqDate	10/2/2014 13:05
Type	Sample	VialNumber	2108
Dilution	1	Comment	
Operator	MPyles	ISTDRefDataFileName	002CALB.D
SamplePassFail	Pass	ISTD PassFail	Pass

QC Analyte Table

Element	m/z	ISTD	Tune Step	Meas Value	FinalConcentration	Units	High Value	QC Flag
Cr	52	45	1	28.72	28.72	ppb	500	
Cd	111	115	2	375.20	375.20	ppb	500	
Pb	208	209	2	1.83	1.83	ppb	500	

QC ISTD Table

Element	m/z	Tune Step	CPS	%RSD	Reference CPS	%Recovery	Lower Limit	Upper Limit	QC Flag
Sc	45	1	165293	0.55	157012	105.3	60	125	
Sc	45	2	5230398	0.69	4724478	110.7	60	125	
Y	89	1	874229	0.25	834924	104.7	60	125	
Y	89	2	7233907	0.09	6574046	110.0	60	125	
In	115	1	1049226	0.44	995641	105.4	60	125	
In	115	2	6339972	0.19	5806836	109.2	60	125	
Tb	159	2	7413324	0.20	6807162	108.9	60	125	
Ho	165	2	6868052	0.66	6345752	108.2	60	125	
Bi	209	1	2084691	0.84	1942224	107.3	60	125	
Bi	209	2	3926003	0.32	3595552	109.2	60	125	

TuneStep	TuneFile
1	he.u
2	nogas.u

Chromium

$$28.72 \times 10 = 287.2 = \textcircled{287}$$

Cadmium

$$375.20 \times 10 = 3752.0 = \textcircled{3750}$$

Lead

$$1.83 \times 10 = \textcircled{18.3}$$

10/2/14
⑤

Sample Report

Sample Name aa63944 1:10
DataPath D:\ICPMH\1\DATA\10-02-14.B
Type Sample
Dilution 1
Operator MPyles
SamplePassFail Pass

Data File Name 015SMPL.D
AcqDate 10/2/2014 13:12
VialNumber 2109
Comment
ISTDRefDataFileName 002CALB.D
ISTD PassFail Pass

QC Analyte Table

Element	m/z	ISTD	Tune Step	Meas Value	FinalConcentration	Units	High Value	QC Flag
Cr	52	45	1	37.37	37.37	ppb	500	
Cd	111	115	2	357.93	357.93	ppb	500	
Pb	208	209	2	2.20	2.20	ppb	500	

QC ISTD Table

Element	m/z	Tune Step	CPS	%RSD	Reference CPS	%Recovery	Lower Limit	Upper Limit	QC Flag
Sc	45	1	163476	0.82	157012	104.1	60	125	
Sc	45	2	5200776	0.50	4724478	110.1	60	125	
Y	89	1	870059	0.28	834924	104.2	60	125	
Y	89	2	7186625	0.22	6574046	109.3	60	125	
In	115	1	1045153	0.48	995641	105.0	60	125	
In	115	2	6327794	0.13	5806836	109.0	60	125	
Tb	159	2	7316686	0.25	6807162	107.5	60	125	
Ho	165	2	6847861	0.13	6345752	107.9	60	125	
Bi	209	1	2071271	0.91	1942224	106.6	60	125	
Bi	209	2	3921007	1.13	3595552	109.1	60	125	

TuneStep	TuneFile
1	he.u
2	nogas.u

Chromium

$$37.37 \times 10 = 373.7 = \textcircled{374}$$

Cadmium

$$357.93 \times 10 = 3579.3 = \textcircled{3580}$$

Lead

$$2.20 \times 10 = \textcircled{22.0}$$

10-2-14
⑥

Sample Report

Sample Name rinse
DataPath D:\ICPMH\1\DATA\10-02-14.B
Type Sample
Dilution 1
Operator MPyles
SamplePassFail Pass

Data File Name 016SMPL.D
AcqDate 10/2/2014 13:19
VialNumber 1303
Comment
ISTDRefDataFileName 002CALB.D
ISTD PassFail Pass

QC Analyte Table

Element	m/z	ISTD	Tune Step	Meas Value	FinalConcentration	Units	High Value	QC Flag
Cr	52	45	1	-0.06	-0.06	ppb	500	
Cd	111	115	2	-0.01	-0.01	ppb	500	
Pb	208	209	2	-0.01	-0.01	ppb	500	

QC ISTD Table

Element	m/z	Tune Step	CPS	%RSD	Reference CPS	%Recovery	Lower Limit	Upper Limit	QC Flag
Sc	45	1	163935	0.33	157012	104.4	60	125	
Sc	45	2	5195094	0.45	4724478	110.0	60	125	
Y	89	1	878189	0.32	834924	105.2	60	125	
Y	89	2	7150968	0.37	6574046	108.8	60	125	
In	115	1	1066263	0.45	995641	107.1	60	125	
In	115	2	6428276	0.68	5806836	110.7	60	125	
Tb	159	2	7315839	0.69	6807162	107.5	60	125	
Ho	165	2	6844728	0.66	6345752	107.9	60	125	
Bi	209	1	2154938	0.38	1942224	111.0	60	125	
Bi	209	2	4083697	0.55	3595552	113.6	60	125	

TuneStep	TuneFile
1	he.u
2	nogas.u

Continuing Calibration Blank (CCB) - US EPA Method 200.8

Sample Name	CCB	Data File Name	017SMPL.D
DataPath	D:\ICPMH\1\DATA\10-02-14.B	Acq Date Time	2014-10-02T13:26:03-05:00
Type	2-CCB	VialNumber	1101
Dilution	1	Comment	
Operator	MPyles	ISTDRefDataFileName	002CALB.D
SamplePassFail	Pass	ISTD PassFail	Pass

QC Analyte Table

Element	m/z	ISTD	Tune Step	Meas Value	Units	QC High	QC Flag
Cr	52	45	1	-0.04	ppb	1.1	
Cd	111	115	2	0.01	ppb	1.1	
Pb	208	209	2	0.00	ppb	1.1	

QC ISTD Table

Element	m/z	Tune Step	CPS	%RSD	Reference CPS	%Recovery	Lower Limit	Upper Limit	QC Flag
Sc	45	1	161624	0.74	157012	102.9	60	125	
Sc	45	2	5161957	0.61	4724478	109.3	60	125	
Y	89	1	859804	0.16	834924	103.0	60	125	
Y	89	2	7204710	1.29	6574046	109.6	60	125	
In	115	1	1033327	0.40	995641	103.8	60	125	
In	115	2	6392034	0.19	5806836	110.1	60	125	
Tb	159	2	7515994	0.23	6807162	110.4	60	125	
Ho	165	2	7000569	0.10	6345752	110.3	60	125	
Bi	209	1	2066059	0.50	1942224	106.4	60	125	
Bi	209	2	4051805	1.12	3595552	112.7	60	125	

TuneStep	TuneFile
1	he.u
2	nogas.u

D-3-14
⑤

Sample Report

Sample Name 0.5 ppb (LLCV)
DataPath D:\ICPMH\1\DATA\10-02-14.B
Type Sample
Dilution 1
Operator MPyles
SamplePassFail Pass

Data File Name 018SMPL.D
AcqData 10/2/2014 13:32
VialNumber 1102
Comment
ISTDRefDataFileName 002CALB.D
ISTD PassFail Pass

QC Analyte Table

Element	m/z	ISTD	Tune Step	Meas Value	FinalConcentration	Units	High Value	QC Flag
Cr	52	45	1	0.43	0.43	ppb	500	
Cd	111	115	2	0.49	0.49	ppb	500	
Pb	208	209	2	0.47	0.47	ppb	500	

QC ISTD Table

Element	m/z	Tune Step	CPS	%RSD	Reference CPS	%Recovery	Lower Limit	Upper Limit	QC Flag
Sc	45	1	163104	0.45	157012	103.9	60	125	
Sc	45	2	5161062	1.17	4724478	109.2	60	125	
Y	89	1	863045	0.82	834924	103.4	60	125	
Y	89	2	7173882	0.71	6574046	109.1	60	125	
In	115	1	1031472	0.61	995641	103.6	60	125	
In	115	2	6336772	0.96	5806836	109.1	60	125	
Tb	159	2	7448090	0.48	6807162	109.4	60	125	
Ho	165	2	6981100	0.22	6345752	110.0	60	125	
Bi	209	1	2066086	1.43	1942224	106.4	60	125	
Bi	209	2	4020831	0.86	3595552	111.8	60	125	

TuneStep	TuneFile
1	he.u
2	nogas.u

102-14
②

Continuing Calibration Verification (CCV) - US EPA Method 200.8

Sample Name CCV
DataPathName D:\ICPMH\1\DATA\10-02-14.B
Type 2-CCV
Dilution 1
Operator MPyles
SamplePassFail Pass

Data File Name 021SMPL.D
AcqDate 10/2/2014 14:00
VialNumber 1105
Comment
ISTD Ref File 002CALB.D
ISTD PassFail Pass

QC Analyte Table

Element	m/z	ISTD	TuneStep	Meas Value	Units	ExpValue	%Rec	QC1 Low	QC1 High	QC2 Low	QC2 High	QC Flag
Cr	52	45	1	96.29	ppb	100	96.3	85	115	90	110	
Cd	111	115	2	95.37	ppb	100	95.4	85	115	90	110	
Pb	208	209	2	104.89	ppb	100	104.9	85	115	90	110	

QC ISTD Table

Element	m/z	Tune Step	CPS	%RSD	Reference CPS	%Rec	Lower Limit	Upper Limit	QC Flag
Sc	45	1	152155	1.65	157012	96.9	60	125	
Sc	45	2	5144383	0.49	4724478	108.9	60	125	
Y	89	1	798634	1.54	834924	95.7	60	125	
Y	89	2	7102604	1.06	6574046	108.0	60	125	
In	115	1	950440	1.47	995641	95.5	60	125	
In	115	2	6294465	1.13	5806836	108.4	60	125	
Tb	159	2	7377281	1.39	6807162	108.4	60	125	
Ho	165	2	6892899	0.74	6345752	108.6	60	125	
Bi	209	1	1966381	0.77	1942224	101.2	60	125	
Bi	209	2	3985686	0.41	3595552	110.9	60	125	

TuneStep	TuneFile
1	he.u
2	nogas.u

10-2-14
(2)

Continuing Calibration Verification (CCV) - US EPA Method 200.8

Sample Name SCP Science 100
DataPathName D:\ICPMH\1\DATA\10-02-14.B
Type 2-CCV
Dilution 1
Operator MPyles
SamplePassFail Pass

Data File Name 022SMPL.D
AcqDate 10/2/2014 14:07
VialNumber 1301
Comment
ISTD Ref File 002CALB.D
ISTD PassFail Pass

QC Analyte Table

Element	m/z	ISTD	TuneStep	Meas Value	Units	ExpValue	%Rec	QC1 Low	QC1 High	QC2 Low	QC2 High	QC Flag
Cr	52	45	1	92.25	ppb	100	92.3	85	115	90	110	
Cd	111	115	2	91.20	ppb	100	91.2	85	115	90	110	
Pb	208	209	2	103.18	ppb	100	103.2	85	115	90	110	

QC ISTD Table

Element	m/z	Tune Step	CPS	%RSD	Reference CPS	%Rec	Lower Limit	Upper Limit	QC Flag
Sc	45	1	163570	0.51	157012	104.2	60	125	
Sc	45	2	5080332	0.65	4724478	107.5	60	125	
Y	89	1	862084	0.69	834924	103.3	60	125	
Y	89	2	7119398	0.47	6574046	108.3	60	125	
In	115	1	1028970	0.66	995641	103.3	60	125	
In	115	2	6414313	0.58	5806836	110.5	60	125	
Tb	159	2	7464620	0.52	6807162	109.7	60	125	
Ho	165	2	6917396	0.51	6345752	109.0	60	125	
Bi	209	1	2079432	0.91	1942224	107.1	60	125	
Bi	209	2	4027874	0.55	3595552	112.0	60	125	

TuneStep	TuneFile
1	he.u
2	nogas.u

0-3-14
⑤

Sample Report

Sample Name rinse
DataPath D:\ICPMH\1\DATA\10-02-14.B
Type Sample
Dilution 1
Operator MPyles
SamplePassFail Pass

Data File Name 023SMPL.D
AcqDate 10/2/2014 14:14
VialNumber 1303
Comment
ISTDRefDataFileName 002CALB.D
ISTD PassFail Pass

QC Analyte Table

Element	m/z	ISTD	Tune Step	Meas Value	FinalConcentration	Units	High Value	QC Flag
Cr	52	45	1	-0.05	-0.05	ppb	500	
Cd	111	115	2	-0.01	-0.01	ppb	500	
Pb	208	209	2	0.02	0.02	ppb	500	

QC ISTD Table

Element	m/z	Tune Step	CPS	%RSD	Reference CPS	%Recovery	Lower Limit	Upper Limit	QC Flag
Sc	45	1	170935	10.76	157012	108.9	60	125	
Sc	45	2	5283819	0.49	4724478	111.8	60	125	
Y	89	1	929767	15.26	834924	111.4	60	125	
Y	89	2	7230119	0.32	6574046	110.0	60	125	
In	115	1	1118848	15.15	995641	112.4	60	125	
In	115	2	6453048	1.17	5806836	111.1	60	125	
Tb	159	2	7307811	0.80	6807162	107.4	60	125	
Ho	165	2	6827333	0.95	6345752	107.6	60	125	
Bi	209	1	2152741	11.00	1942224	110.8	60	125	
Bi	209	2	3994277	0.85	3595552	111.1	60	125	

TuneStep	TuneFile
1	he.u
2	nogas.u

Laboratory Reagent Blank (LRB) - US EPA Method 200.8

Sample Name	Method Blank	Data File Name	024SMPL.D
DataPath	D:\ICPMH\1\DATA\10-02-14.B	AcqDate	10/2/2014 14:20
Type	2-LRB	VialNumber	2201
Dilution	1	Comment	
Operator	MPyles	ISTDRefDataFileName	002CALB.D
SamplePassFail	Pass	ISTD PassFail	Pass

QC Analyte Table

Element	m/z	ISTD	Tune Step	Meas Value	Units	QC High	QC Flag
Cr	52	45	1	-0.02	ppb	1.1	
Cd	111	115	2	0.00	ppb	1.1	
Pb	208	209	2	0.67	ppb	1.1	

QC ISTD Table

Element	m/z	Tune Step	CPS	%RSD	Reference CPS	%Recovery	Lower Limit	Upper Limit	QC Flag
Sc	45	1	173460	1.19	157012	110.5	60	125	
Sc	45	2	5490040	0.99	4724478	116.2	60	125	
Y	89	1	907453	0.85	834924	108.7	60	125	
Y	89	2	7563560	0.85	6574046	115.1	60	125	
In	115	1	1084668	0.79	995641	108.9	60	125	
In	115	2	6737251	0.16	5806836	116.0	60	125	
Tb	159	2	7918413	1.42	6807162	116.3	60	125	
Ho	165	2	7372336	0.31	6345752	116.2	60	125	
Bi	209	1	2215795	0.87	1942224	114.1	60	125	
Bi	209	2	4277082	1.00	3595552	119.0	60	125	

TuneStep	TuneFile	TuneDate
1	he.u	10/2/2014 2:19:00 PM
2	nogas.u	10/2/2014 2:19:00 PM

2344
⑥

Laboratory Reagent Blank (LRB) - US EPA Method 200.8

Sample Name	LRB	Data File Name	025SMPL.D
DataPath	D:\ICPMH\1\DATA\10-02-14.B	AcqDate	10/2/2014 14:27
Type	2-LRB	VialNumber	2202
Dilution	1	Comment	
Operator	MPyles	ISTDRefDataFileName	002CALB.D
SamplePassFail	Pass	ISTD PassFail	Pass

QC Analyte Table

Element	m/z	ISTD	Tune Step	Meas Value	Units	QC High	QC Flag
Cr	52	45	1	-0.03	ppb	1.1	
Cd	111	115	2	-0.01	ppb	1.1	
Pb	208	209	2	0.00	ppb	1.1	

QC ISTD Table

Element	m/z	Tune Step	CPS	%RSD	Reference CPS	%Recovery	Lower Limit	Upper Limit	QC Flag
Sc	45	1	165646	0.10	157012	105.5	60	125	
Sc	45	2	5140051	0.60	4724478	108.8	60	125	
Y	89	1	872084	0.67	834924	104.5	60	125	
Y	89	2	7122207	0.62	6574046	108.3	60	125	
In	115	1	1034589	0.64	995641	103.9	60	125	
In	115	2	6340530	0.43	5806836	109.2	60	125	
Tb	159	2	7488818	0.25	6807162	110.0	60	125	
Ho	165	2	6941446	1.03	6345752	109.4	60	125	
Bi	209	1	2082397	0.83	1942224	107.2	60	125	
Bi	209	2	4049517	0.52	3595552	112.6	60	125	

TuneStep	TuneFile	TuneDate
1	he.u	10/2/2014 2:25:00 PM
2	nogas.u	10/2/2014 2:25:00 PM

2214
②

Laboratory Fortified Blank (LFB) - US EPA Method 200.8

Sample Name LFB
DataPath D:\ICPMH\1\DATA\10-02-14.B
Type 2-LFB
Dilution 1
Operator MPyles
SamplePassFail Pass

Data File Name 026SMPL.D
AcqDate 10/2/2014 14:34
VialNumber 2203
Comment
ISTDRefDataFileName 002CALB.D
ISTD PassFail Pass

QC Analyte Table

Element	m/z	ISTD	Tune Step	Conc.	Units	Spike Amt	%Recovery	%QC Low	%QC High	QC Flag
Cr	52	45	1	94.33	ppb	100	94.4	85	115	
Cd	111	115	2	93.03	ppb	100	93.0	85	115	
Pb	208	209	2	104.25	ppb	100	104.3	85	115	

QC ISTD Table

Element	m/z	Tune Step	CPS	%RSD	Reference CPS	%Recovery	Lower Limiy	Upper Limit	QC Flag
Sc	45	1	163292	1.56	157012	104.0	60	125	
Sc	45	2	5143422	0.64	4724478	108.9	60	125	
Y	89	1	855454	0.60	834924	102.5	60	125	
Y	89	2	7150974	0.73	6574046	108.8	60	125	
In	115	1	1019361	0.58	995641	102.4	60	125	
In	115	2	6366001	0.13	5806836	109.6	60	125	
Tb	159	2	7470827	0.41	6807162	109.7	60	125	
Ho	165	2	7040962	0.50	6345752	111.0	60	125	
Bi	209	1	2089699	1.01	1942224	107.6	60	125	
Bi	209	2	4054564	0.74	3595552	112.8	60	125	

TuneStep	TuneFile
1	he.u
2	nogas.u

10-2-14
②

Sample Report

Sample Name aa63945 1:10
DataPath D:\ICPMH\1\DATA\10-02-14.B
Type Sample
Dilution 1
Operator MPyles
SamplePassFail Pass

Data File Name 027SMPL.D
AcqDate 10/2/2014 14:41
VialNumber 2204
Comment
ISTDRefDataFileName 002CALB.D
ISTD PassFail Pass

QC Analyte Table

Element	m/z	ISTD	Tune Step	Meas Value	FinalConcentration	Units	High Value	QC Flag
Cr	52	45	1	28.24	28.24	ppb	500	
Cd	111	115	2	378.32	378.32	ppb	500	
Pb	208	209	2	0.64	0.64	ppb	500	

QC ISTD Table

Element	m/z	Tune Step	CPS	%RSD	Reference CPS	%Recovery	Lower Limit	Upper Limit	QC Flag
Sc	45	1	162936	0.47	157012	103.8	60	125	
Sc	45	2	5167342	0.70	4724478	109.4	60	125	
Y	89	1	872675	0.75	834924	104.5	60	125	
Y	89	2	7258275	0.86	6574046	110.4	60	125	
In	115	1	1032562	0.18	995641	103.7	60	125	
In	115	2	6311989	0.93	5806836	108.7	60	125	
Tb	159	2	7406405	0.26	6807162	108.8	60	125	
Ho	165	2	6891261	0.33	6345752	108.6	60	125	
Bi	209	1	2047442	0.77	1942224	105.4	60	125	
Bi	209	2	3944484	0.12	3595552	109.7	60	125	

TuneStep	TuneFile
1	he.u
2	nogas.u

Chromium

$$28.24 \times 10 = 282.4 = \textcircled{282}$$

Cadmium

$$378.32 \times 10 = 3783.2 = \textcircled{3780}$$

Lead

$$0.64 \times 10 = \textcircled{6.40}$$

10-2-14
⑤

Sample Report

Sample Name aa63945 Dup 1:10
DataPath D:\ICPMH\1\DATA\10-02-14.B
Type Sample
Dilution 1
Operator MPyles
SamplePassFail Pass

Data File Name 028SMPL.D
AcqDate 10/2/2014 14:48
VialNumber 2205
Comment
ISTDRefDataFileName 002CALB.D
ISTD PassFail Pass

QC Analyte Table

Element	m/z	ISTD	Tune Step	Meas Value	FinalConcentration	Units	High Value	QC Flag
Cr	52	45	1	25.00	25.00	ppb	500	
Cd	111	115	2	359.66	359.66	ppb	500	
Pb	208	209	2	0.72	0.72	ppb	500	

QC ISTD Table

Element	m/z	Tune Step	CPS	%RSD	Reference CPS	%Recovery	Lower Limit	Upper Limit	QC Flag
Sc	45	1	166753	0.90	157012	106.2	60	125	
Sc	45	2	5293163	13.13	4724478	112.0	60	125	
Y	89	1	871024	0.12	834924	104.3	60	125	
Y	89	2	7335422	11.83	6574046	111.6	60	125	
In	115	1	1041971	0.22	995641	104.7	60	125	
In	115	2	6465559	12.57	5806836	111.3	60	125	
Tb	159	2	7523714	11.90	6807162	110.5	60	125	
Ho	165	2	7039493	12.00	6345752	110.9	60	125	
Bi	209	1	2070155	0.50	1942224	106.6	60	125	
Bi	209	2	4059325	15.78	3595552	112.9	60	125	

TuneStep	TuneFile
1	he.u
2	nogas.u

Chromium

$$25.00 \times 10 = \textcircled{250}$$

Cadmium

$$359.66 \times 10 = 3596.6 = \textcircled{3600}$$

Lead

$$0.72 \times 10 = \textcircled{7.20}$$

0-3-14
②

Sample Report

Sample Name aa63946 1:10
DataPath D:\ICPMH\1\DATA\10-02-14.B
Type Sample
Dilution 1
Operator MPyles
SamplePassFail Pass

Data File Name 029SMPL.D
AcqDate 10/2/2014 14:54
VialNumber 2206
Comment
ISTDRefDataFileName 002CALB.D
ISTD PassFail Pass

QC Analyte Table

Element	m/z	ISTD	Tune Step	Meas Value	FinalConcentration	Units	High Value	QC Flag
Cr	52	45	1	22.21	22.21	ppb	500	
Cd	111	115	2	278.74	278.74	ppb	500	
Pb	208	209	2	1.06	1.06	ppb	500	

QC ISTD Table

Element	m/z	Tune Step	CPS	%RSD	Reference CPS	%Recovery	Lower Limit	Upper Limit	QC Flag
Sc	45	1	164319	0.09	157012	104.7	60	125	
Sc	45	2	5212371	0.66	4724478	110.3	60	125	
Y	89	1	865372	0.51	834924	103.6	60	125	
Y	89	2	7163087	0.36	6574046	109.0	60	125	
In	115	1	1037433	0.27	995641	104.2	60	125	
In	115	2	6374605	0.46	5806836	109.8	60	125	
Tb	159	2	7403214	0.28	6807162	108.8	60	125	
Ho	165	2	6934266	0.25	6345752	109.3	60	125	
Bi	209	1	2060975	0.66	1942224	106.1	60	125	
Bi	209	2	3938323	0.34	3595552	109.5	60	125	

TuneStep	TuneFile
1	he.u
2	nogas.u

Chromium

$$22.21 \times 10 = 222.1 = \textcircled{222}$$

Cadmium

$$278.74 \times 10 = 2787.4 = \textcircled{2790}$$

Lead

$$1.06 \times 10 = \textcircled{10.6}$$

03-14
⑤

Sample Report

Sample Name aa63947 1:10
DataPath D:\ICPMH\1\DATA\10-02-14.B
Type Sample
Dilution 1
Operator MPyles
SamplePassFail Pass

Data File Name 030SMPL.D
AcqDate 10/2/2014 15:01
VialNumber 2207
Comment
ISTDRefDataFileName 002CALB.D
ISTD PassFail Pass

QC Analyte Table

Element	m/z	ISTD	Tune Step	Meas Value	FinalConcentration	Units	High Value	QC Flag
Cr	52	45	1	17.70	17.70	ppb	500	
Cd	111	115	2	259.29	259.29	ppb	500	
Pb	208	209	2	0.48	0.48	ppb	500	

QC ISTD Table

Element	m/z	Tune Step	CPS	%RSD	Reference CPS	%Recovery	Lower Limit	Upper Limit	QC Flag
Sc	45	1	164086	0.91	157012	104.5	60	125	
Sc	45	2	5268230	0.61	4724478	111.5	60	125	
Y	89	1	860953	0.24	834924	103.1	60	125	
Y	89	2	7232159	0.42	6574046	110.0	60	125	
In	115	1	1037370	0.21	995641	104.2	60	125	
In	115	2	6374492	0.82	5806836	109.8	60	125	
Tb	159	2	7399215	0.64	6807162	108.7	60	125	
Ho	165	2	6902404	0.36	6345752	108.8	60	125	
Bi	209	1	2061034	0.42	1942224	106.1	60	125	
Bi	209	2	3976386	0.75	3595552	110.6	60	125	

TuneStep	TuneFile
1	he.u
2	nogas.u

Chromium

$$17.70 \times 10 = 177$$

Cadmium

$$259.29 \times 10 = 2592.9 = 2590$$

Lead

$$0.48 \times 10 = 4.80 = <MQL$$

10-2-14
⑤

Sample Report

Sample Name	aa63948 1:10	Data File Name	031SMPL.D
DataPath	D:\ICPMH\1\DATA\10-02-14.B	AcqData	10/2/2014 15:08
Type	Sample	VialNumber	2208
Dilution	1	Comment	
Operator	MPyles	ISTDRefDataFileName	002CALB.D
SamplePassFail	Pass	ISTD PassFail	Pass

QC Analyte Table

Element	m/z	ISTD	Tune Step	Meas Value	FinalConcentration	Units	High Value	QC Flag
Cr	52	45	1	30.93	30.93	ppb	500	
Cd	111	115	2	358.23	358.23	ppb	500	
Pb	208	209	2	2.65	2.65	ppb	500	

QC ISTD Table

Element	m/z	Tune Step	CPS	%RSD	Reference CPS	%Recovery	Lower Limit	Upper Limit	QC Flag
Sc	45	1	163959	0.31	157012	104.4	60	125	
Sc	45	2	5224084	0.11	4724478	110.6	60	125	
Y	89	1	864259	0.42	834924	103.5	60	125	
Y	89	2	7234476	0.81	6574046	110.0	60	125	
In	115	1	1035377	0.44	995641	104.0	60	125	
In	115	2	6362524	0.80	5806836	109.6	60	125	
Tb	159	2	7442196	0.64	6807162	109.3	60	125	
Ho	165	2	6952428	0.72	6345752	109.6	60	125	
Bi	209	1	2054720	0.52	1942224	105.8	60	125	
Bi	209	2	4022333	0.58	3595552	111.9	60	125	

TuneStep	TuneFile
1	he.u
2	nogas.u

Chromium

$$30.93 \times 10 = 309.3 = \textcircled{309}$$

Cadmium

$$358.23 \times 10 = 3582.3 = \textcircled{3582}$$

Lead

$$2.65 \times 10 = \textcircled{26.5}$$

10-3-14
①

Sample Report

Sample Name	rinse	Data File Name	032SMPL.D
DataPath	D:\ICPMH\1\DATA\10-02-14.B	AcqDate	10/2/2014 15:15
Type	Sample	VialNumber	1303
Dilution	1	Comment	
Operator	MPyles	ISTDRefDataFileName	002CALB.D
SamplePassFail	Pass	ISTD PassFail	Pass

QC Analyte Table

Element	m/z	ISTD	Tune Step	Meas Value	FinalConcentration	Units	High Value	QC Flag
Cr	52	45	1	-0.05	-0.05	ppb	500	
Cd	111	115	2	-0.01	-0.01	ppb	500	
Pb	208	209	2	-0.02	-0.02	ppb	500	

QC ISTD Table

Element	m/z	Tune Step	CPS	%RSD	Reference CPS	%Recovery	Lower Limit	Upper Limit	QC Flag
Sc	45	1	163412	0.54	157012	104.1	60	125	
Sc	45	2	5150800	0.60	4724478	109.0	60	125	
Y	89	1	868368	0.47	834924	104.0	60	125	
Y	89	2	7069948	0.64	6574046	107.5	60	125	
In	115	1	1056893	0.39	995641	106.2	60	125	
In	115	2	6370316	0.93	5806836	109.7	60	125	
Tb	159	2	7346348	0.74	6807162	107.9	60	125	
Ho	165	2	6841288	0.57	6345752	107.8	60	125	
Bi	209	1	2112458	1.10	1942224	108.8	60	125	
Bi	209	2	4046966	0.83	3595552	112.6	60	125	

TuneStep	TuneFile
1	he.u
2	nogas.u

Continuing Calibration Blank (CCB) - US EPA Method 200.8

Sample Name	CCB	Data File Name	033SMPL.D
DataPath	D:\ICPMH\1\DATA\10-02-14.B	Acq Date Time	2014-10-02T15:22:14-05:00
Type	2-CCB	VialNumber	1101
Dilution	1	Comment	
Operator	MPyles	ISTDRefDataFileName	002CALB.D
SamplePassFail	Pass	ISTD PassFail	Pass

QC Analyte Table

Element	m/z	ISTD	Tune Step	Meas Value	Units	QC High	QC Flag
Cr	52	45	1	-0.04	ppb	1.1	
Cd	111	115	2	0.01	ppb	1.1	
Pb	208	209	2	-0.01	ppb	1.1	

QC ISTD Table

Element	m/z	Tune Step	CPS	%RSD	Reference CPS	%Recovery	Lower Limit	Upper Limit	QC Flag
Sc	45	1	161537	0.53	157012	102.9	60	125	
Sc	45	2	5122182	1.33	4724478	108.4	60	125	
Y	89	1	848924	0.16	834924	101.7	60	125	
Y	89	2	7163588	1.08	6574046	109.0	60	125	
In	115	1	1012600	0.29	995641	101.7	60	125	
In	115	2	6399208	0.27	5806836	110.2	60	125	
Tb	159	2	7582119	1.22	6807162	111.4	60	125	
Ho	165	2	7072412	0.79	6345752	111.5	60	125	
Bi	209	1	2067942	0.76	1942224	106.5	60	125	
Bi	209	2	4094922	1.14	3595552	113.9	60	125	

TuneStep	TuneFile
1	he.u
2	nogas.u

10-3-14
⑤

Sample Report

Sample Name 0.5 ppb (LLCV)
DataPath D:\ICPMH\1\DATA\10-02-14.B
Type Sample
Dilution 1
Operator MPyles
SamplePassFail Pass

Data File Name 034SMPL.D
AcqDate 10/2/2014 15:29
VialNumber 1102
Comment
ISTDRefDataFileName 002CALB.D
ISTD PassFail Pass

QC Analyte Table

Element	m/z	ISTD	Tune Step	Meas Value	FinalConcentration	Units	High Value	QC Flag
Cr	52	45	1	0.45	0.45	ppb	500	
Cd	111	115	2	0.46	0.46	ppb	500	
Pb	208	209	2	0.47	0.47	ppb	500	

QC ISTD Table

Element	m/z	Tune Step	CPS	%RSD	Reference CPS	%Recovery	Lower Limit	Upper Limit	QC Flag
Sc	45	1	157775	5.97	157012	100.5	60	125	
Sc	45	2	5112847	0.57	4724478	108.2	60	125	
Y	89	1	831473	5.09	834924	99.6	60	125	
Y	89	2	7140042	0.34	6574046	108.6	60	125	
In	115	1	990095	5.16	995641	99.4	60	125	
In	115	2	6380945	0.42	5806836	109.9	60	125	
Tb	159	2	7519936	0.79	6807162	110.5	60	125	
Ho	165	2	6968571	0.61	6345752	109.8	60	125	
Bi	209	1	1967461	5.37	1942224	101.3	60	125	
Bi	209	2	3995329	1.13	3595552	111.1	60	125	

TuneStep	TuneFile
1	he.u
2	nogas.u

10-3-14
②

Continuing Calibration Verification (CCV) - US EPA Method 200.8

Sample Name CCV
DataPathName D:\ICPMH\1\DATA\10-02-14.B
Type 2-CCV
Dilution 1
Operator MPyles
SamplePassFail Pass

Data File Name 035SMPL.D
AcqDate 10/2/2014 15:35
VialNumber 1105
Comment
ISTD Ref File 002CALB.D
ISTD PassFail Pass

QC Analyte Table

Element	m/z	ISTD	TuneStep	Meas Value	Units	ExpValue	%Rec	QC1 Low	QC1 High	QC2 Low	QC2 High	QC Flag
Cr	52	45	1	94.43	ppb	100	94.4	85	115	90	110	
Cd	111	115	2	95.01	ppb	100	95.0	85	115	90	110	
Pb	208	209	2	105.69	ppb	100	105.7	85	115	90	110	

QC ISTD Table

Element	m/z	Tune Step	CPS	%RSD	Reference CPS	%Rec	Lower Limit	Upper Limit	QC Flag
Sc	45	1	161998	1.60	157012	103.2	60	125	
Sc	45	2	5113069	0.59	4724478	108.2	60	125	
Y	89	1	882522	7.07	834924	105.7	60	125	
Y	89	2	7057932	0.33	6574046	107.4	60	125	
In	115	1	1054796	6.91	995641	105.9	60	125	
In	115	2	6352590	0.64	5806836	109.4	60	125	
Tb	159	2	7385328	0.68	6807162	108.5	60	125	
Ho	165	2	6925849	0.48	6345752	109.1	60	125	
Bi	209	1	2044552	1.47	1942224	105.3	60	125	
Bi	209	2	3999248	0.92	3595552	111.2	60	125	

TuneStep	TuneFile
1	he.u
2	nogas.u

0-3-14
 (P)

Continuing Calibration Verification (CCV) - US EPA Method 200.8

Sample Name SCP Science 100
DataPathName D:\ICPMH\1\DATA\10-02-14.B
Type 2-CCV
Dilution 1
Operator MPyles
SamplePassFail Pass

Data File Name 036SMPL.D
AcqDate 10/2/2014 15:42
VialNumber 1301
Comment
ISTD Ref File 002CALB.D
ISTD PassFail Pass

QC Analyte Table

Element	m/z	ISTD	TuneStep	Meas Value	Units	ExpValue	%Rec	QC1 Low	QC1 High	QC2 Low	QC2 High	QC Flag
Cr	52	45	1	92.74	ppb	100	92.7	85	115	90	110	
Cd	111	115	2	90.54	ppb	100	90.5	85	115	90	110	
Pb	208	209	2	102.45	ppb	100	102.4	85	115	90	110	

QC ISTD Table

Element	m/z	Tune Step	CPS	%RSD	Reference CPS	%Rec	Lower Limit	Upper Limit	QC Flag
Sc	45	1	161627	0.47	157012	102.9	60	125	
Sc	45	2	5076812	0.82	4724478	107.5	60	125	
Y	89	1	853964	0.75	834924	102.3	60	125	
Y	89	2	7032198	0.43	6574046	107.0	60	125	
In	115	1	1019443	0.05	995641	102.4	60	125	
In	115	2	6381957	0.65	5806836	109.9	60	125	
Tb	159	2	7416861	0.54	6807162	109.0	60	125	
Ho	165	2	6957318	0.52	6345752	109.6	60	125	
Bi	209	1	2059460	0.77	1942224	106.0	60	125	
Bi	209	2	4008071	0.36	3595552	111.5	60	125	

TuneStep	TuneFile
1	he.u
2	nogas.u

03-14
⑤

TCLP Extraction Worksheet

Digestion Set Number: 14-098

TCLP Extraction Date: 9-30-14

Scientist(s): _____

Bench #	63945	63945 Dup	63946	63947	63948	
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Preliminary Evaluations

% Solids	100	100	100	100	100	
Particle Reduction?	No	No	No	No	No	
Subsample Weight (g)	5.02	5.02	5.00	5.01	5.01	
Initial pH	11	10	11	11	11	
pH after HCL & Heat	10	10	—	—	—	
Extraction Fluid	#2	#2	#2	#2	#2	

Tumbling Process

Sample Weight (g)	101.2	101.7	101.7	100.6	101.9	
Ext. Fluid Weight (g)	2000	2000	2000	2000	2000	
Start Time	1332	1332	1332	1332	1332	
Vent?	Yes	Yes	Yes	Yes	Yes	
End Time	0832	0832	0832	0832	0832	
Total Hours	19	19	19	19	19	

Filtration

Extract pH	6.0	6.0	6.5	6.5	6.0	
Volume Filtered (ml)	100	100	100	100	100	
Preserved?	Yes	Yes	Yes	Yes	Yes	
Date Digested	10-1-14	10-1-14	10-1-14	10-1-14	10-1-14	

Comments

Metals Digestion Worksheet

Digestion Set Number 14-098

Date Digested 10-1-14

Scientist Myles

Sample Type: ☒ Water ☐ Sediment ☐ Fish ☐ Other

Digestion Method 200.2 3050 245.1 Other

Bench # / Analysis

63945	Na	Mg	Al	K	Cr	Mn	Fe	Co	Ni	Cu	Zn	As	Se	Ag	Cd	Ba	Hg	Pb	Other
63945 Dup	Na	Mg	Al	K	Cr	Mn	Fe	Co	Ni	Cu	Zn	As	Se	Ag	Cd	Ba	Hg	Pb	Other
63946	Na	Mg	Al	K	Cr	Mn	Fe	Co	Ni	Cu	Zn	As	Se	Ag	Cd	Ba	Hg	Pb	Other
63947	Na	Mg	Al	K	Cr	Mn	Fe	Co	Ni	Cu	Zn	As	Se	Ag	Cd	Ba	Hg	Pb	Other
63948	Na	Mg	Al	K	Cr	Mn	Fe	Co	Ni	Cu	Zn	As	Se	Ag	Cd	Ba	Hg	Pb	Other
63948 MS	Na	Mg	Al	K	Cr	Mn	Fe	Co	Ni	Cu	Zn	As	Se	Ag	Cd	Ba	Hg	Pb	Other
63948 MS D	Na	Mg	Al	K	Cr	Mn	Fe	Co	Ni	Cu	Zn	As	Se	Ag	Cd	Ba	Hg	Pb	Other
	Na	Mg	Al	K	Cr	Mn	Fe	Co	Ni	Cu	Zn	As	Se	Ag	Cd	Ba	Hg	Pb	Other
	Na	Mg	Al	K	Cr	Mn	Fe	Co	Ni	Cu	Zn	As	Se	Ag	Cd	Ba	Hg	Pb	Other
	Na	Mg	Al	K	Cr	Mn	Fe	Co	Ni	Cu	Zn	As	Se	Ag	Cd	Ba	Hg	Pb	Other

Volume

Bench #	63945	63945 Dup	63946	63947	63948	63948 MS	63948 MS D		
Initial Volume: g (ml)	50	50	50	50	50	50	50		
Final Volume: ml	50	50	50	50	50	50	50		

Quality Control

	LRB	LFB	LLFB	QCS/CRM	Matrix Spike
Spike Standard	/	500 µl SCP	/	/	500 µl SCP
Spike Conc.	/	100 ppb	/	/	100 ppb

Digestion

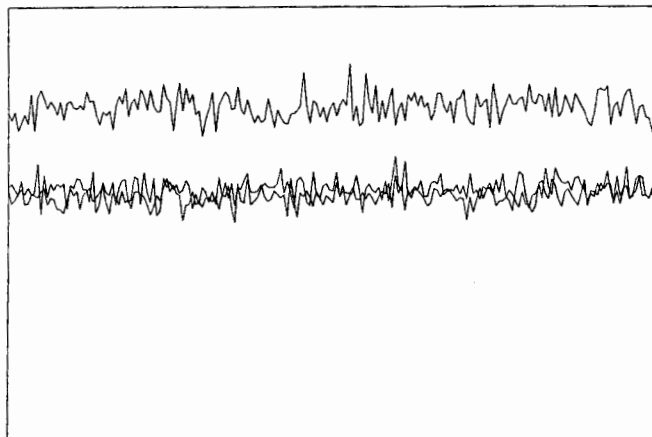
Digestion Tube Lot #	Hot Block Temperature	Start Time	End Time
1309222	95°C	0915	1430

Comments TKLP

Charge Code 3700

Tune Report

Tune File : he.u
Comment : 10-02-14



Integration Time: 0.1000 sec
Sampling Period: 0.3100 sec
n: 200
Oxide: 156/140 0.492%
Doubly Charged: 70/140 1.093%

m/z	Range	Count	Mean	RSD%	Background
59	2,000	1584.0	1544.1	3.69	0.20
89	2,000	1208.0	1167.0	4.16	0.80
205	5,000	2926.0	2837.3	3.44	2.00

Tuning Parameters

===Plasma Condition===

RF Power : 1550 W
RF Matching : 1.8 V
Smpl Depth : 8 mm
Torch-H : -0.4 mm
Torch-V : -0.2 mm
Carrier Gas : 0.75 L/min
Dilution Mode : OFF
Makeup Gas : 0.1 L/min
Optional Gas : --- %
Nebulizer Pump : 0.1 rps
Sample Pump : --- rps
S/C Temp : 2 degC

===Ion Lenses===

Extract 1 : 0 V
Extract 2 : -200 V
Omega Bias : -90 V
Omega Lens : 10 V
Cell Entrance : -40 V
Cell Exit : -60 V
Deflect : 1.4 V
Plate Bias : -60 V
OctP RF : 170 V
OctP Bias : -18 V

===Q-Pole Parameters===

AMU Gain : 141
AMU Offset : 127
Axis Gain : 1.0015
Axis Offset : 0.01
QP Bias : -15 V

===Detector Parameters===

Discriminator : 4.5 mV
Analog HV : 1867 V
Pulse HV : 1680 V

===Reaction Cell===

Reaction Mode : ON
H2 Gas : --- mL/min
He Gas : 4.3 mL/min
Optional Gas : --- %

P/A Factor Tuning Report

Acquired: Oct 2 2014 09:58 am

Mass[amu]	Element	P/A Factor
45	Sc	0.139470
52	Cr	0.143967
53	Cr	0.144165
89	Y	0.152074
106	Cd	Sensitivity too low
108	Cd	Sensitivity too low
111	Cd	0.161310
114	Cd	0.160065
115	In	0.159722
118	(In)	Sensitivity too low
159	Tb	0.163571
165	Ho	0.164236
206	(Pb)	0.167359
207	(Pb)	0.167829
208	Pb	0.167430
209	Bi	0.167680

===Detector Parameters===

Discriminator: 4.5 mV
Analog HV: 1867 V
Pulse HV: 1680 V

QC Tune Report

Data File: D:\ICPMH\1\7500\QCTUNE.D
Date Acquired: 2 Oct 2014 10:09:47 am
Operator:
Misc Info:
Vial Number: 0
Current Method: D:\ICPMH\1\METHODS\TN6020.m

Minimum Response(CPS)

Element	Actual	Required	Flag
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RSD (%)

Element	Actual	Required	Flag
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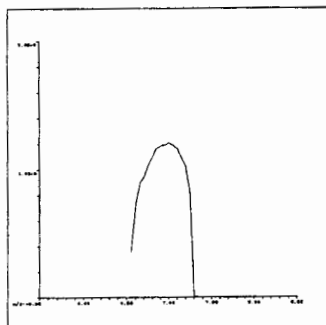
7 Li	0.90	5.00	
59 Co	0.93	5.00	
115 In	1.34	5.00	
205 Tl	1.45	5.00	

Ion Ratio

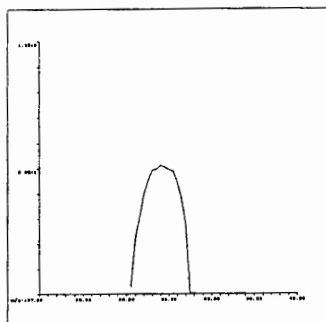
Element	Actual	Required	Flag
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Maximum Bkg. Count(CPS)

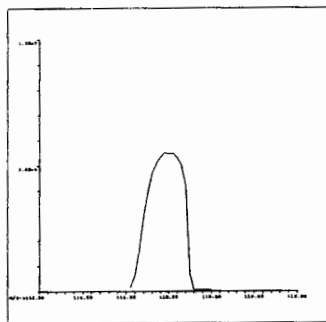
Element	Actual	Required	Flag
---------	--------	----------	------



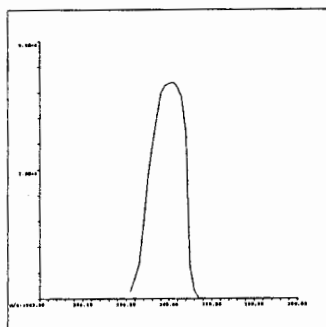
7 Li
Mass Calib.
Actual: 7.00
Required: 6.90-7.10
Flag:
Peak Width
Actual: 0.70
Required: 0.75
Flag:



59 Co
Mass Calib.
Actual: 58.90
Required: 58.90-59.10
Flag:
Peak Width
Actual: 0.60
Required: 0.75
Flag:



115 In
Mass Calib.
Actual: 115.00
Required: 114.90-115.10
Flag:
Peak Width
Actual: 0.60
Required: 0.75
Flag:



205 Tl
Mass Calib.
Actual: 205.00
Required: 204.90-205.10
Flag:
Peak Width
Actual: 0.60
Required: 0.75
Flag:

QC Tune Result:Pass

D:\ICPMH\1\7500\qctune.d

Replicated Data: Tune #1

Mass	Count (CPS)				
7	76083.46	75337.15	75879.26	74877.12	75251.16
59	27119.27	27564.43	27506.12	27297.57	27836.38
115	2788266.00	2855546.00	2833338.00	2828205.00	2834431.00
205	19620.92	20344.93	20238.63	20054.79	19942.97

Calibration Blank Report

Sample Name Cal blank
DataPath D:\ICPMH\1\DATA\10-02-14.B
Type CalBlk
Dilution 1

Data File Name 001CALB.D
AcqDate 10/2/2014 10:42
VialNumber 1101
Comment

QC Analyte Table

Element	m/z	ISTD	Tune Step	CPS	%RSD
Cr	52	45	1	1553	3.83
Cd	111	115	2	223	8.16
Pb	208	209	2	2329	3.92

QC ISTD Table

Element	m/z	Tune Step	CPS	%RSD
Sc	45	1	141722	2.81
Sc	45	2	4774495	0.67
Y	89	1	753313	3.09
Y	89	2	6642097	0.54
In	115	1	894694	2.82
In	115	2	5845977	0.10
Tb	159	2	6910924	0.85
Ho	165	2	6399922	0.32
Bi	209	1	1830774	2.18
Bi	209	2	3667715	0.33

TuneStep	TuneFile
1	he.u
2	nogas.u

Calibration Blank Report

Sample Name Cal blank
DataPath D:\ICPMH\1\DATA\10-02-14.B
Type CalBlk
Dilution 1

Data File Name 002CALB.D
AcqDate 10/2/2014 10:49
VialNumber 1101
Comment

QC Analyte Table

Element	m/z	ISTD	Tune Step	CPS	%RSD
Cr	52	45	1	1462	8.44
Cd	111	115	2	208	9.94
Pb	208	209	2	1881	3.10

QC ISTD Table

Element	m/z	Tune Step	CPS	%RSD
Sc	45	1	157012	2.04
Sc	45	2	4724478	1.07
Y	89	1	834924	1.86
Y	89	2	6574046	2.01
In	115	1	995641	1.82
In	115	2	5806836	1.93
Tb	159	2	6807162	0.90
Ho	165	2	6345752	1.20
Bi	209	1	1942224	1.92
Bi	209	2	3595552	1.98

TuneStep	TuneFile
1	he.u
2	nogas.u

Calibration Standard Report

Sample Name 0.5 ppb
DataPath D:\ICPMH\1\DATA\10-02-14.B
Type CalStd
Dilution 1
Operator MPyles

Data File Name 001CALS.D
AcqDate 10/2/2014 10:55
VialNumber 1102
Comment
ISTDRefDataFileName 002CALB.D

QC Analyte Table

Element	m/z	ISTD	Tune Step	CPS	%RSD
Cr	52	45	1	5594	1.63
Cd	111	115	2	3881	3.55
Pb	208	209	2	17390	1.12

QC ISTD Table

Element	m/z	Tune Step	CPS	%RSD	Reference CPS	%Recovery	Lower Limit	Upper Limit	QC Flag
Sc	45	1	155633	0.62	157012	99.1	60	125	
Sc	45	2	5004646	2.11	4724478	105.9	60	125	
Y	89	1	827514	0.45	834924	99.1	60	125	
Y	89	2	6997372	1.56	6574046	106.4	60	125	
In	115	1	978595	0.13	995641	98.3	60	125	
In	115	2	6142952	1.89	5806836	105.8	60	125	
Tb	159	2	7204762	1.78	6807162	105.8	60	125	
Ho	165	2	6663917	1.61	6345752	105.0	60	125	
Bi	209	1	1915276	0.53	1942224	98.6	60	125	
Bi	209	2	3823961	1.86	3595552	106.4	60	125	

TuneStep	TuneFile
1	he.u
2	nogas.u

Calibration Standard Report

Sample Name 1.0 ppb
DataPath D:\ICPMH\1\DATA\10-02-14.B
Type CalStd
Dilution 1
Operator MPyles

Data File Name 002CALS.D
AcqDate 10/2/2014 11:02
VialNumber 1103
Comment
ISTDRefDataFileName 002CALB.D

QC Analyte Table

Element	m/z	ISTD	Tune Step	CPS	%RSD
Cr	52	45	1	11077	0.69
Cd	111	115	2	8226	0.55
Pb	208	209	2	35805	0.15

QC ISTD Table

Element	m/z	Tune Step	CPS	%RSD	Reference CPS	%Recovery	Lower Limit	Upper Limit	QC Flag
Sc	45	1	157145	0.28	157012	100.1	60	125	
Sc	45	2	4911206	0.91	4724478	104.0	60	125	
Y	89	1	828622	0.48	834924	99.2	60	125	
Y	89	2	6795743	0.34	6574046	103.4	60	125	
In	115	1	985487	0.85	995641	99.0	60	125	
In	115	2	6039868	0.57	5806836	104.0	60	125	
Tb	159	2	7073916	0.76	6807162	103.9	60	125	
Ho	165	2	6564855	0.18	6345752	103.5	60	125	
Bi	209	1	1939631	1.91	1942224	99.9	60	125	
Bi	209	2	3744952	0.40	3595552	104.2	60	125	

TuneStep	TuneFile
1	he.u
2	nogas.u

Calibration Standard Report

Sample Name 10.0 ppb
DataPath D:\ICPMH\1\DATA\10-02-14.B
Type CalStd
Dilution 1
Operator MPyles

Data File Name 003CALS.D
AcqDate 10/2/2014 11:09
VialNumber 1104
Comment
ISTDRefDataFileName 002CALB.D

QC Analyte Table

Element	m/z	ISTD	Tune Step	CPS	%RSD
Cr	52	45	1	88273	1.40
Cd	111	115	2	73196	0.91
Pb	208	209	2	316513	0.41

QC ISTD Table

Element	m/z	Tune Step	CPS	%RSD	Reference CPS	%Recovery	Lower Limit	Upper Limit	QC Flag
Sc	45	1	158526	1.29	157012	101.0	60	125	
Sc	45	2	5145147	1.75	4724478	108.9	60	125	
Y	89	1	849258	1.04	834924	101.7	60	125	
Y	89	2	7229717	1.68	6574046	110.0	60	125	
In	115	1	1014176	1.51	995641	101.9	60	125	
In	115	2	6374115	2.09	5806836	109.8	60	125	
Tb	159	2	7452521	1.65	6807162	109.5	60	125	
Ho	165	2	6945594	2.55	6345752	109.5	60	125	
Bi	209	1	2007809	2.56	1942224	103.4	60	125	
Bi	209	2	4041049	2.85	3595552	112.4	60	125	

TuneStep	TuneFile
1	he.u
2	nogas.u

Calibration Standard Report

Sample Name 100 ppb
DataPath D:\ICPMH\1\DATA\10-02-14.B
Type CalStd
Dilution 1
Operator MPyles

Data File Name 004CAL.S.D
AcqDate 10/2/2014 11:16
VialNumber 1105
Comment
ISTDRefDataFileName 002CALB.D

QC Analyte Table

Element	m/z	ISTD	Tune Step	CPS	%RSD
Cr	52	45	1	901305	0.40
Cd	111	115	2	755900	0.58
Pb	208	209	2	3382539	1.06

QC ISTD Table

Element	m/z	Tune Step	CPS	%RSD	Reference CPS	%Recovery	Lower Limit	Upper Limit	QC Flag
Sc	45	1	156386	0.66	157012	99.6	60	125	
Sc	45	2	4959767	0.64	4724478	105.0	60	125	
Y	89	1	838271	0.39	834924	100.4	60	125	
Y	89	2	6976752	0.35	6574046	106.1	60	125	
In	115	1	1003419	0.22	995641	100.8	60	125	
In	115	2	6209241	1.10	5806836	106.9	60	125	
Tb	159	2	7198341	0.45	6807162	105.7	60	125	
Ho	165	2	6714803	0.99	6345752	105.8	60	125	
Bi	209	1	1996045	0.37	1942224	102.8	60	125	
Bi	209	2	3878361	1.40	3595552	107.9	60	125	

TuneStep	TuneFile
1	he.u
2	nogas.u

Calibration Standard Report

Sample Name 200 ppb
DataPath D:\ICPMH\1\DATA\10-02-14.B
Type CalStd
Dilution 1
Operator MPyles

Data File Name 005CALS.D
AcqDate 10/2/2014 11:23
VialNumber 1106
Comment
ISTDRefDataFileName 002CALB.D

QC Analyte Table

Element	m/z	ISTD	Tune Step	CPS	%RSD
Cr	52	45	1	1994766	2.05
Cd	111	115	2	1687523	0.45
Pb	208	209	2	7046892	0.47

QC ISTD Table

Element	m/z	Tune Step	CPS	%RSD	Reference CPS	%Recovery	Lower Limit	Upper Limit	QC Flag
Sc	45	1	156238	0.46	157012	99.5	60	125	
Sc	45	2	5038409	1.23	4724478	106.6	60	125	
Y	89	1	846571	0.28	834924	101.4	60	125	
Y	89	2	7062359	1.03	6574046	107.4	60	125	
In	115	1	1018226	0.73	995641	102.3	60	125	
In	115	2	6346345	0.90	5806836	109.3	60	125	
Tb	159	2	7439369	0.51	6807162	109.3	60	125	
Ho	165	2	6884966	1.06	6345752	108.5	60	125	
Bi	209	1	2052393	2.50	1942224	105.7	60	125	
Bi	209	2	4040614	0.90	3595552	112.4	60	125	

TuneStep	TuneFile
1	he.u
2	nogas.u

Calibration Standard Report

Sample Name	500 ppb	Data File Name	006CAL.S.D
DataPath	D:\ICPMH\1\DATA\10-02-14.B	AcqDate	10/2/2014 11:30
Type	CalStd	VialNumber	1107
Dilution	1	Comment	
Operator	MPyles	ISTDRefDataFileName	002CALB.D

QC Analyte Table

Element	m/z	ISTD	Tune Step	CPS	%RSD
Cr	52	45	1	4526105	0.40
Cd	111	115	2	3789983	1.39
Pb	208	209	2	16173865	0.83

QC ISTD Table

Element	m/z	Tune Step	CPS	%RSD	Reference CPS	%Recovery	Lower Limit	Upper Limit	QC Flag
Sc	45	1	152579	0.10	157012	97.2	60	125	
Sc	45	2	4806654	0.30	4724478	101.7	60	125	
Y	89	1	821355	0.58	834924	98.4	60	125	
Y	89	2	6781016	1.07	6574046	103.1	60	125	
In	115	1	989504	0.16	995641	99.4	60	125	
In	115	2	6080811	0.83	5806836	104.7	60	125	
Tb	159	2	7238981	1.26	6807162	106.3	60	125	
Ho	165	2	6690890	1.02	6345752	105.4	60	125	
Bi	209	1	2068345	0.98	1942224	106.5	60	125	
Bi	209	2	3966478	0.35	3595552	110.3	60	125	

TuneStep	TuneFile
1	he.u
2	nogas.u

Sample Report

Sample Name rinse
DataPath D:\ICPMH\1\DATA\10-02-14.B
Type Sample
Dilution 1
Operator MPyles
SamplePassFail Pass

Data File Name 001SMPL.D
AcqDate 10/2/2014 11:36
VialNumber 1303
Comment
ISTDRefDataFileName 002CALB.D
ISTD PassFail Pass

QC Analyte Table

Element	m/z	ISTD	Tune Step	Meas Value	FinalConcentration	Units	High Value	QC Flag
Cr	52	45	1	0.01	0.01	ppb	500	
Cd	111	115	2	-0.01	-0.01	ppb	500	
Pb	208	209	2	0.10	0.10	ppb	500	

QC ISTD Table

Element	m/z	Tune Step	CPS	%RSD	Reference CPS	%Recovery	Lower Limit	Upper Limit	QC Flag
Sc	45	1	157685	1.04	157012	100.4	60	125	
Sc	45	2	4967687	1.03	4724478	105.1	60	125	
Y	89	1	845758	0.35	834924	101.3	60	125	
Y	89	2	6916906	0.08	6574046	105.2	60	125	
In	115	1	1027897	0.61	995641	103.2	60	125	
In	115	2	6220308	0.66	5806836	107.1	60	125	
Tb	159	2	7140365	1.09	6807162	104.9	60	125	
Ho	165	2	6631413	0.91	6345752	104.5	60	125	
Bi	209	1	2095943	0.98	1942224	107.9	60	125	
Bi	209	2	3947462	0.46	3595552	109.8	60	125	

TuneStep	TuneFile
1	he.u
2	nogas.u

Continuing Calibration Blank (CCB) - US EPA Method 200.8

Sample Name	CCB	Data File Name	002SMPL.D
DataPath	D:\ICPMH\1\DATA\10-02-14.B	Acq Date Time	2014-10-02T11:43:43-05:00
Type	2-CCB	VialNumber	1101
Dilution	1	Comment	
Operator	MPyles	ISTDRefDataFileName	002CALB.D
SamplePassFail	Pass	ISTD PassFail	Pass

QC Analyte Table

Element	m/z	ISTD	Tune Step	Meas Value	Units	QC High	QC Flag
Cr	52	45	1	0.01	ppb	1.1	
Cd	111	115	2	0.01	ppb	1.1	
Pb	208	209	2	0.04	ppb	1.1	

QC ISTD Table

Element	m/z	Tune Step	CPS	%RSD	Reference CPS	%Recovery	Lower Limit	Upper Limit	QC Flag
Sc	45	1	155217	0.23	157012	98.9	60	125	
Sc	45	2	4904337	0.14	4724478	103.8	60	125	
Y	89	1	831570	0.35	834924	99.6	60	125	
Y	89	2	6906374	0.02	6574046	105.1	60	125	
In	115	1	991280	0.24	995641	99.6	60	125	
In	115	2	6159773	0.84	5806836	106.1	60	125	
Tb	159	2	7198240	0.34	6807162	105.7	60	125	
Ho	165	2	6694125	0.40	6345752	105.5	60	125	
Bi	209	1	1985014	0.66	1942224	102.2	60	125	
Bi	209	2	3853258	0.71	3595552	107.2	60	125	

TuneStep	TuneFile
1	he.u
2	nogas.u

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Sample Report

Sample Name 0.5 ppb (LLCV)
DataPath D:\ICPMH\1\DATA\10-02-14.B
Type Sample
Dilution 1
Operator MPyles
SamplePassFail Pass

Data File Name 003SMPL.D
AcqDate 10/2/2014 11:50
VialNumber 1102
Comment
ISTDRefDataFileName 002CALB.D
ISTD PassFail Pass

QC Analyte Table

Element	m/z	ISTD	Tune Step	Meas Value	FinalConcentration	Units	High Value	QC Flag
Cr	52	45	1	0.44	0.44	ppb	500	
Cd	111	115	2	0.48	0.48	ppb	500	
Pb	208	209	2	0.51	0.51	ppb	500	

QC ISTD Table

Element	m/z	Tune Step	CPS	%RSD	Reference CPS	%Recovery	Lower Limit	Upper Limit	QC Flag
Sc	45	1	156520	0.76	157012	99.7	60	125	
Sc	45	2	4965625	0.80	4724478	105.1	60	125	
Y	89	1	837026	0.27	834924	100.3	60	125	
Y	89	2	6960292	0.14	6574046	105.9	60	125	
In	115	1	1001171	0.18	995641	100.6	60	125	
In	115	2	6154644	0.62	5806836	106.0	60	125	
Tb	159	2	7230197	0.52	6807162	106.2	60	125	
Ho	165	2	6741616	0.62	6345752	106.2	60	125	
Bi	209	1	2026674	1.21	1942224	104.3	60	125	
Bi	209	2	3873751	0.62	3595552	107.7	60	125	

TuneStep	TuneFile
1	he.u
2	nogas.u

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(15)

Continuing Calibration Verification (CCV) - US EPA Method 200.8

Sample Name CCV
DataPathName D:\ICPMH\1\DATA\10-02-14.B
Type 2-CCV
Dilution 1
Operator MPyles
SamplePassFail Pass

Data File Name 004SMPL.D
AcqDate 10/2/2014 11:57
VialNumber 1105
Comment
ISTD Ref File 002CALB.D
ISTD PassFail Pass

QC Analyte Table

Element	m/z	ISTD	TuneStep	Meas Value	Units	ExpValue	%Rec	QC1 Low	QC1 High	QC2 Low	QC2 High	QC Flag
Cr	52	45	1	95.61	ppb	100	95.6	85	115	90	110	
Cd	111	115	2	97.11	ppb	100	97.1	85	115	90	110	
Pb	208	209	2	105.79	ppb	100	105.8	85	115	90	110	

QC ISTD Table

Element	m/z	Tune Step	CPS	%RSD	Reference CPS	%Rec	Lower Limit	Upper Limit	QC Flag
Sc	45	1	156074	0.21	157012	99.4	60	125	
Sc	45	2	4940537	0.45	4724478	104.6	60	125	
Y	89	1	833068	0.20	834924	99.8	60	125	
Y	89	2	6924146	1.03	6574046	105.3	60	125	
In	115	1	996376	0.55	995641	100.1	60	125	
In	115	2	6185602	1.16	5806836	106.5	60	125	
Tb	159	2	7213396	1.14	6807162	106.0	60	125	
Ho	165	2	6702010	0.86	6345752	105.6	60	125	
Bi	209	1	2011596	0.86	1942224	103.6	60	125	
Bi	209	2	3918952	0.26	3595552	109.0	60	125	

TuneStep	TuneFile
1	he.u
2	nogas.u

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Continuing Calibration Verification (CCV) - US EPA Method 200.8

Sample Name SCP Science (100)
DataPathName D:\ICPMH\1\DATA\10-02-14.B
Type 2-CCV
Dilution 1
Operator MPyles
SamplePassFail Pass

Data File Name 005SMPL.D
AcqDate 10/2/2014 12:04
VialNumber 1301
Comment
ISTD Ref File 002CALB.D
ISTD PassFail Pass

QC Analyte Table

Element	m/z	ISTD	TuneStep	Meas Value	Units	ExpValue	%Rec	QC1 Low	QC1 High	QC2 Low	QC2 High	QC Flag
Cr	52	45	1	93.75	ppb	100	93.8	85	115	90	110	
Cd	111	115	2	92.99	ppb	100	93.0	85	115	90	110	
Pb	208	209	2	101.50	ppb	100	101.5	85	115	90	110	

QC ISTD Table

Element	m/z	Tune Step	CPS	%RSD	Reference CPS	%Rec	Lower Limit	Upper Limit	QC Flag
Sc	45	1	156736	1.79	157012	99.8	60	125	
Sc	45	2	4948974	0.67	4724478	104.8	60	125	
Y	89	1	861909	5.98	834924	103.2	60	125	
Y	89	2	6964805	0.50	6574046	105.9	60	125	
In	115	1	1026505	4.48	995641	103.1	60	125	
In	115	2	6218901	1.12	5806836	107.1	60	125	
Tb	159	2	7248393	0.62	6807162	106.5	60	125	
Ho	165	2	6728901	0.82	6345752	106.0	60	125	
Bi	209	1	2057633	1.38	1942224	105.9	60	125	
Bi	209	2	3926809	0.42	3595552	109.2	60	125	

TuneStep	TuneFile
1	he.u
2	nogas.u

10-2-14
⑥

Sample Report

Sample Name Q POD
DataPath D:\ICPMH\1\DATA\10-02-14.B
Type Sample
Dilution 1
Operator MPyles
SamplePassFail Fail

Data File Name 006SMPL.D
AcqDate 10/2/2014 12:11
VialNumber 2401
Comment
ISTDRefDataFileName 002CALB.D
ISTD PassFail Pass

QC Analyte Table

Element	m/z	ISTD	Tune Step	Meas Value	FinalConcentration	Units	High Value	QC Flag
Cr	52	45	1	-0.02	-0.02	ppb	500	
Cd	111	115	2	-0.02	-0.02	ppb	500	
Pb	208	209	2	0.13	0.13	ppb	500	

QC ISTD Table

Element	m/z	Tune Step	CPS	%RSD	Reference CPS	%Recovery	Lower Limit	Upper Limit	QC Flag
Sc	45	1	159387	2.17	157012	101.5	60	125	
Sc	45	2	5148482	0.22	4724478	109.0	60	125	
Y	89	1	875720	0.34	834924	104.9	60	125	
Y	89	2	7177120	0.66	6574046	109.2	60	125	
In	115	1	1008354	3.35	995641	101.3	60	125	
In	115	2	6290487	1.83	5806836	108.3	60	125	
Tb	159	2	7329085	0.25	6807162	107.7	60	125	
Ho	165	2	6813211	0.33	6345752	107.4	60	125	
Bi	209	1	723858	11.39	1942224	37.3	60	125	IS Fail
Bi	209	2	2008003	5.13	3595552	55.8	60	125	IS Fail

TuneStep	TuneFile
1	he.u
2	nogas.u

Laboratory Reagent Blank (LRB) - US EPA Method 200.8

Sample Name	Method Blank	Data File Name	007SMPL.D
DataPath	D:\ICPMH\1\DATA\10-02-14.B	AcqDate	10/2/2014 12:17
Type	2-LRB	VialNumber	2101
Dilution	1	Comment	
Operator	MPyles	ISTDRefDataFileName	002CALB.D
SamplePassFail	Pass	ISTD PassFail	Pass

QC Analyte Table

Element	m/z	ISTD	Tune Step	Meas Value	Units	QC High	QC Flag
Cr	52	45	1	0.01	ppb	1.1	
Cd	111	115	2	-0.01	ppb	1.1	
Pb	208	209	2	0.70	ppb	1.1	

QC ISTD Table

Element	m/z	Tune Step	CPS	%RSD	Reference CPS	%Recovery	Lower Limit	Upper Limit	QC Flag
Sc	45	1	167078	0.97	157012	106.4	60	125	
Sc	45	2	5348403	0.50	4724478	113.2	60	125	
Y	89	1	894124	0.27	834924	107.1	60	125	
Y	89	2	7451912	0.65	6574046	113.4	60	125	
In	115	1	1071055	0.36	995641	107.6	60	125	
In	115	2	6573934	0.46	5806836	113.2	60	125	
Tb	159	2	7759521	1.02	6807162	114.0	60	125	
Ho	165	2	7272978	0.77	6345752	114.6	60	125	
Bi	209	1	2160649	1.03	1942224	111.2	60	125	
Bi	209	2	4230946	0.38	3595552	117.7	60	125	

TuneStep	TuneFile	TuneDate
1	he.u	10/2/2014 12:16:00 PM
2	nogas.u	10/2/2014 12:16:00 PM

10-2-14
⑤

Laboratory Reagent Blank (LRB) - US EPA Method 200.8

Sample Name	LRB	Data File Name	008SMPL.D
DataPath	D:\ICPMH\1\DATA\10-02-14.B	AcqDate	10/2/2014 12:24
Type	2-LRB	VialNumber	2102
Dilution	1	Comment	
Operator	MPyles	ISTDRefDataFileName	002CALB.D
SamplePassFail	Pass	ISTD PassFail	Pass

QC Analyte Table

Element	m/z	ISTD	Tune Step	Meas Value	Units	QC High	QC Flag
Cr	52	45	1	-0.01	ppb	1.1	
Cd	111	115	2	-0.01	ppb	1.1	
Pb	208	209	2	0.02	ppb	1.1	

QC ISTD Table

Element	m/z	Tune Step	CPS	%RSD	Reference CPS	%Recovery	Lower Limit	Upper Limit	QC Flag
Sc	45	1	163118	7.96	157012	103.9	60	125	
Sc	45	2	5074868	0.82	4724478	107.4	60	125	
Y	89	1	885867	10.88	834924	106.1	60	125	
Y	89	2	7131475	0.60	6574046	108.5	60	125	
In	115	1	1064946	11.33	995641	107.0	60	125	
In	115	2	6330876	0.36	5806836	109.0	60	125	
Tb	159	2	7338816	0.52	6807162	107.8	60	125	
Ho	165	2	6807208	1.13	6345752	107.3	60	125	
Bi	209	1	2104090	7.89	1942224	108.3	60	125	
Bi	209	2	3993158	0.23	3595552	111.1	60	125	

TuneStep	TuneFile	TuneDate
1	he.u	10/2/2014 12:22:00 PM
2	nogas.u	10/2/2014 12:22:00 PM

10-2-14
⑤

Laboratory Fortified Blank (LFB) - US EPA Method 200.8

Sample Name	LFB	Data File Name	009SMPL.D
DataPath	D:\ICPMH\1\DATA\10-02-14.B	AcqDate	10/2/2014 12:31
Type	2-LFB	VialNumber	2103
Dilution	1	Comment	
Operator	MPyles	ISTDRefDataFileName	002CALB.D
SamplePassFail	Pass	ISTD PassFail	Pass

QC Analyte Table

Element	m/z	ISTD	Tune Step	Conc.	Units	Spike Amt	%Recovery	%QC Low	%QC High	QC Flag
Cr	52	45	1	94.75	ppb	100	94.8	85	115	
Cd	111	115	2	93.74	ppb	100	93.8	85	115	
Pb	208	209	2	103.09	ppb	100	103.1	85	115	

QC ISTD Table

Element	m/z	Tune Step	CPS	%RSD	Reference CPS	%Recovery	Lower Limiy	Upper Limit	QC Flag
Sc	45	1	162904	1.70	157012	103.8	60	125	
Sc	45	2	5134897	1.01	4724478	108.7	60	125	
Y	89	1	857472	0.86	834924	102.7	60	125	
Y	89	2	7159125	0.57	6574046	108.9	60	125	
In	115	1	1031810	0.41	995641	103.6	60	125	
In	115	2	6430126	0.14	5806836	110.7	60	125	
Tb	159	2	7471833	0.83	6807162	109.8	60	125	
Ho	165	2	6952255	0.70	6345752	109.6	60	125	
Bi	209	1	2105744	0.49	1942224	108.4	60	125	
Bi	209	2	4068260	0.96	3595552	113.1	60	125	

TuneStep	TuneFile
1	he.u
2	nogas.u

10-2-14
B

Sample Report

Sample Name aa63940 1:10
DataPath D:\ICPMH\1\DATA\10-02-14.B
Type Sample
Dilution 1
Operator MPyles
SamplePassFail Pass

Data File Name 010SMPL.D
AcqDate 10/2/2014 12:38
VialNumber 2104
Comment
ISTDRefDataFileName 002CALB.D
ISTD PassFail Pass

QC Analyte Table

Element	m/z	ISTD	Tune Step	Meas Value	FinalConcentration	Units	High Value	QC Flag
Cr	52	45	1	19.30	19.30	ppb	500	
Cd	111	115	2	164.16	164.16	ppb	500	
Pb	208	209	2	1.05	1.05	ppb	500	

QC ISTD Table

Element	m/z	Tune Step	CPS	%RSD	Reference CPS	%Recovery	Lower Limit	Upper Limit	QC Flag
Sc	45	1	169133	7.78	157012	107.7	60	125	
Sc	45	2	5244638	2.51	4724478	111.0	60	125	
Y	89	1	924461	11.70	834924	110.7	60	125	
Y	89	2	7205941	2.73	6574046	109.6	60	125	
In	115	1	1106843	10.56	995641	111.2	60	125	
In	115	2	6352666	1.92	5806836	109.4	60	125	
Tb	159	2	7374469	2.84	6807162	108.3	60	125	
Ho	165	2	6889999	3.19	6345752	108.6	60	125	
Bi	209	1	2095137	8.21	1942224	107.9	60	125	
Bi	209	2	3944443	3.38	3595552	109.7	60	125	

TuneStep	TuneFile
1	he.u
2	nogas.u

Chromium

$$19.30 \times 10 = 193$$

Cadmium

$$164.16 \times 10 = 1641.6 = 1640$$

Lead

$$1.05 \times 10 = 10.5$$

0-3-14
ES

Sample Report

Sample Name aa63940 Dup 1:10
DataPath D:\ICPMH\1\DATA\10-02-14.B
Type Sample
Dilution 1
Operator MPyles
SamplePassFail Pass

Data File Name 011SMPL.D
AcqDate 10/2/2014 12:45
VialNumber 2105
Comment
ISTDRefDataFileName 002CALB.D
ISTD PassFail Pass

QC Analyte Table

Element	m/z	ISTD	Tune Step	Meas Value	FinalConcentration	Units	High Value	QC Flag
Cr	52	45	1	21.63	21.63	ppb	500	
Cd	111	115	2	190.66	190.66	ppb	500	
Pb	208	209	2	0.72	0.72	ppb	500	

QC ISTD Table

Element	m/z	Tune Step	CPS	%RSD	Reference CPS	%Recovery	Lower Limit	Upper Limit	QC Flag
Sc	45	1	165338	0.65	157012	105.3	60	125	
Sc	45	2	5257480	19.88	4724478	111.3	60	125	
Y	89	1	873193	0.44	834924	104.6	60	125	
Y	89	2	7292505	19.75	6574046	110.9	60	125	
In	115	1	1046198	0.18	995641	105.1	60	125	
In	115	2	6465669	21.12	5806836	111.3	60	125	
Tb	159	2	7391255	19.56	6807162	108.6	60	125	
Ho	165	2	6937001	19.78	6345752	109.3	60	125	
Bi	209	1	2081419	0.26	1942224	107.2	60	125	
Bi	209	2	3958572	20.15	3595552	110.1	60	125	

TuneStep	TuneFile
1	he.u
2	nogas.u

Chromium

$$21.63 \times 10 = 216.3 = \textcircled{216}$$

Cadmium

$$190.66 \times 10 = 1906.6 = \textcircled{1910}$$

Lead

$$0.72 \times 10 = \textcircled{7.20}$$

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Sample Report

Sample Name	aa63941 1:10	Data File Name	012SMPL.D
DataPath	D:\ICPMH\1\DATA\10-02-14.B	AcqDate	10/2/2014 12:51
Type	Sample	VialNumber	2106
Dilution	1	Comment	
Operator	MPyles	ISTDRefDataFileName	002CALB.D
SamplePassFail	Pass	ISTD PassFail	Pass

QC Analyte Table

Element	m/z	ISTD	Tune Step	Meas Value	FinalConcentration	Units	High Value	QC Flag
Cr	52	45	1	32.51	32.51	ppb	500	
Cd	111	115	2	311.43	311.43	ppb	500	
Pb	208	209	2	0.80	0.80	ppb	500	

QC ISTD Table

Element	m/z	Tune Step	CPS	%RSD	Reference CPS	%Recovery	Lower Limit	Upper Limit	QC Flag
Sc	45	1	169474	0.61	157012	107.9	60	125	
Sc	45	2	5347364	0.52	4724478	113.2	60	125	
Y	89	1	900006	0.51	834924	107.8	60	125	
Y	89	2	7438310	0.14	6574046	113.1	60	125	
In	115	1	1069902	0.44	995641	107.5	60	125	
In	115	2	6416826	0.99	5806836	110.5	60	125	
Tb	159	2	7414304	0.85	6807162	108.9	60	125	
Ho	165	2	6874887	0.47	6345752	108.3	60	125	
Bi	209	1	2082613	0.58	1942224	107.2	60	125	
Bi	209	2	3922166	0.57	3595552	109.1	60	125	

TuneStep	TuneFile
1	he.u
2	nogas.u

Chromium

$$32.51 \times 10 = 325.1 = \textcircled{325}$$

Cadmium

$$311.43 \times 10 = 3114.3 = \textcircled{3110}$$

Lead

$$0.80 \times 10 = \textcircled{8.00}$$

10-2-14
16

Sample Report

Sample Name aa63942 1:10
DataPath D:\ICPMH\1\DATA\10-02-14.B
Type Sample
Dilution 1
Operator MPyles
SamplePassFail Pass

Data File Name 013SMPL.D
AcqDate 10/2/2014 12:58
VialNumber 2107
Comment
ISTDRefDataFileName 002CALB.D
ISTD PassFail Pass

QC Analyte Table

Element	m/z	ISTD	Tune Step	Meas Value	FinalConcentration	Units	High Value	QC Flag
Cr	52	45	1	30.61	30.61	ppb	500	
Cd	111	115	2	355.30	355.30	ppb	500	
Pb	208	209	2	1.27	1.27	ppb	500	

QC ISTD Table

Element	m/z	Tune Step	CPS	%RSD	Reference CPS	%Recovery	Lower Limit	Upper Limit	QC Flag
Sc	45	1	167687	0.55	157012	106.8	60	125	
Sc	45	2	5320318	1.06	4724478	112.6	60	125	
Y	89	1	923534	6.18	834924	110.6	60	125	
Y	89	2	7295422	0.94	6574046	111.0	60	125	
In	115	1	1097127	4.42	995641	110.2	60	125	
In	115	2	6428326	0.92	5806836	110.7	60	125	
Tb	159	2	7464184	0.48	6807162	109.7	60	125	
Ho	165	2	6894607	0.58	6345752	108.6	60	125	
Bi	209	1	2080670	0.83	1942224	107.1	60	125	
Bi	209	2	3968455	0.80	3595552	110.4	60	125	

TuneStep	TuneFile
1	he.u
2	nogas.u

Chromium

$$30.61 \times 10 = 306.1 = \textcircled{306}$$

Cadmium

$$355.30 \times 10 = 3553 = \textcircled{3550}$$

Lead

$$1.27 \times 10 = \textcircled{12.7}$$

3-14
⑥

Sample Report

Sample Name aa63943 1:10
DataPath D:\ICPMH\1\DATA\10-02-14.B
Type Sample
Dilution 1
Operator MPyles
SamplePassFail Pass

Data File Name 014SMPL.D
AcqDate 10/2/2014 13:05
VialNumber 2108
Comment
ISTDRefDataFileName 002CALB.D
ISTD PassFail Pass

QC Analyte Table

Element	m/z	ISTD	Tune Step	Meas Value	FinalConcentration	Units	High Value	QC Flag
Cr	52	45	1	28.72	28.72	ppb	500	
Cd	111	115	2	375.20	375.20	ppb	500	
Pb	208	209	2	1.83	1.83	ppb	500	

QC ISTD Table

Element	m/z	Tune Step	CPS	%RSD	Reference CPS	%Recovery	Lower Limit	Upper Limit	QC Flag
Sc	45	1	165293	0.55	157012	105.3	60	125	
Sc	45	2	5230398	0.69	4724478	110.7	60	125	
Y	89	1	874229	0.25	834924	104.7	60	125	
Y	89	2	7233907	0.09	6574046	110.0	60	125	
In	115	1	1049226	0.44	995641	105.4	60	125	
In	115	2	6339972	0.19	5806836	109.2	60	125	
Tb	159	2	7413324	0.20	6807162	108.9	60	125	
Ho	165	2	6868052	0.66	6345752	108.2	60	125	
Bi	209	1	2084691	0.84	1942224	107.3	60	125	
Bi	209	2	3926003	0.32	3595552	109.2	60	125	

TuneStep	TuneFile
1	he.u
2	nogas.u

Chromium

$$28.72 \times 10 = 287.2 = \textcircled{287}$$

Cadmium

$$375.20 \times 10 = 3752.0 = \textcircled{3750}$$

Lead

$$1.83 \times 10 = \textcircled{18.3}$$

10-3-14
⑥

Sample Report

Sample Name aa63944 1:10
DataPath D:\ICPMH\1\DATA\10-02-14.B
Type Sample
Dilution 1
Operator MPyles
SamplePassFail Pass

Data File Name 015SMPL.D
AcqDate 10/2/2014 13:12
VialNumber 2109
Comment
ISTDRefDataFileName 002CALB.D
ISTD PassFail Pass

QC Analyte Table

Element	m/z	ISTD	Tune Step	Meas Value	FinalConcentration	Units	High Value	QC Flag
Cr	52	45	1	37.37	37.37	ppb	500	
Cd	111	115	2	357.93	357.93	ppb	500	
Pb	208	209	2	2.20	2.20	ppb	500	

QC ISTD Table

Element	m/z	Tune Step	CPS	%RSD	Reference CPS	%Recovery	Lower Limit	Upper Limit	QC Flag
Sc	45	1	163476	0.82	157012	104.1	60	125	
Sc	45	2	5200776	0.50	4724478	110.1	60	125	
Y	89	1	870059	0.28	834924	104.2	60	125	
Y	89	2	7186625	0.22	6574046	109.3	60	125	
In	115	1	1045153	0.48	995641	105.0	60	125	
In	115	2	6327794	0.13	5806836	109.0	60	125	
Tb	159	2	7316686	0.25	6807162	107.5	60	125	
Ho	165	2	6847861	0.13	6345752	107.9	60	125	
Bi	209	1	2071271	0.91	1942224	106.6	60	125	
Bi	209	2	3921007	1.13	3595552	109.1	60	125	

TuneStep	TuneFile
1	he.u
2	nogas.u

Chromium

$$37.37 \times 10 = 373.7 = \textcircled{374}$$

Cadmium

$$357.93 \times 10 = 3579.3 = \textcircled{3580}$$

Lead

$$2.20 \times 10 = \textcircled{22.0}$$

10-2-14
⑥

Sample Report

Sample Name	rinse	Data File Name	016SMPL.D
DataPath	D:\ICPMH\1\DATA\10-02-14.B	AcqDate	10/2/2014 13:19
Type	Sample	VialNumber	1303
Dilution	1	Comment	
Operator	MPyles	ISTDRefDataFileName	002CALB.D
SamplePassFail	Pass	ISTD PassFail	Pass

QC Analyte Table

Element	m/z	ISTD	Tune Step	Meas Value	FinalConcentration	Units	High Value	QC Flag
Cr	52	45	1	-0.06	-0.06	ppb	500	
Cd	111	115	2	-0.01	-0.01	ppb	500	
Pb	208	209	2	-0.01	-0.01	ppb	500	

QC ISTD Table

Element	m/z	Tune Step	CPS	%RSD	Reference CPS	%Recovery	Lower Limit	Upper Limit	QC Flag
Sc	45	1	163935	0.33	157012	104.4	60	125	
Sc	45	2	5195094	0.45	4724478	110.0	60	125	
Y	89	1	878189	0.32	834924	105.2	60	125	
Y	89	2	7150968	0.37	6574046	108.8	60	125	
In	115	1	1066263	0.45	995641	107.1	60	125	
In	115	2	6428276	0.68	5806836	110.7	60	125	
Tb	159	2	7315839	0.69	6807162	107.5	60	125	
Ho	165	2	6844728	0.66	6345752	107.9	60	125	
Bi	209	1	2154938	0.38	1942224	111.0	60	125	
Bi	209	2	4083697	0.55	3595552	113.6	60	125	

TuneStep	TuneFile
1	he.u
2	nogas.u

Continuing Calibration Blank (CCB) - US EPA Method 200.8

Sample Name	CCB	Data File Name	017SMPL.D
DataPath	D:\ICPMH\1\DATA\10-02-14.B	Acq Date Time	2014-10-02T13:26:03-05:00
Type	2-CCB	VialNumber	1101
Dilution	1	Comment	
Operator	MPyles	ISTDRefDataFileName	002CALB.D
SamplePassFail	Pass	ISTD PassFail	Pass

QC Analyte Table

Element	m/z	ISTD	Tune Step	Meas Value	Units	QC High	QC Flag
Cr	52	45	1	-0.04	ppb	1.1	
Cd	111	115	2	0.01	ppb	1.1	
Pb	208	209	2	0.00	ppb	1.1	

QC ISTD Table

Element	m/z	Tune Step	CPS	%RSD	Reference CPS	%Recovery	Lower Limit	Upper Limit	QC Flag
Sc	45	1	161624	0.74	157012	102.9	60	125	
Sc	45	2	5161957	0.61	4724478	109.3	60	125	
Y	89	1	859804	0.16	834924	103.0	60	125	
Y	89	2	7204710	1.29	6574046	109.6	60	125	
In	115	1	1033327	0.40	995641	103.8	60	125	
In	115	2	6392034	0.19	5806836	110.1	60	125	
Tb	159	2	7515994	0.23	6807162	110.4	60	125	
Ho	165	2	7000569	0.10	6345752	110.3	60	125	
Bi	209	1	2066059	0.50	1942224	106.4	60	125	
Bi	209	2	4051805	1.12	3595552	112.7	60	125	

TuneStep	TuneFile
1	he.u
2	nogas.u

0-2-14
⑤

Sample Report

Sample Name 0.5 ppb (LLCV)
DataPath D:\ICPMH\1\DATA\10-02-14.B
Type Sample
Dilution 1
Operator MPyles
SamplePassFail Pass

Data File Name 018SMPL.D
AcqDate 10/2/2014 13:32
VialNumber 1102
Comment
ISTDRefDataFileName 002CALB.D
ISTD PassFail Pass

QC Analyte Table

Element	m/z	ISTD	Tune Step	Meas Value	FinalConcentration	Units	High Value	QC Flag
Cr	52	45	1	0.43	0.43	ppb	500	
Cd	111	115	2	0.49	0.49	ppb	500	
Pb	208	209	2	0.47	0.47	ppb	500	

QC ISTD Table

Element	m/z	Tune Step	CPS	%RSD	Reference CPS	%Recovery	Lower Limit	Upper Limit	QC Flag
Sc	45	1	163104	0.45	157012	103.9	60	125	
Sc	45	2	5161062	1.17	4724478	109.2	60	125	
Y	89	1	863045	0.82	834924	103.4	60	125	
Y	89	2	7173882	0.71	6574046	109.1	60	125	
In	115	1	1031472	0.61	995641	103.6	60	125	
In	115	2	6336772	0.96	5806836	109.1	60	125	
Tb	159	2	7448090	0.48	6807162	109.4	60	125	
Ho	165	2	6981100	0.22	6345752	110.0	60	125	
Bi	209	1	2066086	1.43	1942224	106.4	60	125	
Bi	209	2	4020831	0.86	3595552	111.8	60	125	

TuneStep	TuneFile
1	he.u
2	nogas.u

10-3-14
②

Continuing Calibration Verification (CCV) - US EPA Method 200.8

Sample Name CCV
DataPathName D:\ICPMH\1\DATA\10-02-14.B
Type 2-CCV
Dilution 1
Operator MPyles
SamplePassFail Pass

Data File Name 021SMPL.D
AcqDate 10/2/2014 14:00
VialNumber 1105
Comment
ISTD Ref File 002CALB.D
ISTD PassFail Pass

QC Analyte Table

Element	m/z	ISTD	TuneStep	Meas Value	Units	ExpValue	%Rec	QC1 Low	QC1 High	QC2 Low	QC2 High	QC Flag
Cr	52	45	1	96.29	ppb	100	96.3	85	115	90	110	
Cd	111	115	2	95.37	ppb	100	95.4	85	115	90	110	
Pb	208	209	2	104.89	ppb	100	104.9	85	115	90	110	

QC ISTD Table

Element	m/z	Tune Step	CPS	%RSD	Reference CPS	%Rec	Lower Limit	Upper Limit	QC Flag
Sc	45	1	152155	1.65	157012	96.9	60	125	
Sc	45	2	5144383	0.49	4724478	108.9	60	125	
Y	89	1	798634	1.54	834924	95.7	60	125	
Y	89	2	7102604	1.06	6574046	108.0	60	125	
In	115	1	950440	1.47	995641	95.5	60	125	
In	115	2	6294465	1.13	5806836	108.4	60	125	
Tb	159	2	7377281	1.39	6807162	108.4	60	125	
Ho	165	2	6892899	0.74	6345752	108.6	60	125	
Bi	209	1	1966381	0.77	1942224	101.2	60	125	
Bi	209	2	3985686	0.41	3595552	110.9	60	125	

TuneStep	TuneFile
1	he.u
2	nogas.u

10-2-14
⑤

Continuing Calibration Verification (CCV) - US EPA Method 200.8

Sample Name SCP Science 100
DataPathName D:\ICPMH\1\DATA\10-02-14.B
Type 2-CCV
Dilution 1
Operator MPyles
SamplePassFail Pass

Data File Name 022SMPL.D
AcqDate 10/2/2014 14:07
VialNumber 1301
Comment
ISTD Ref File 002CALB.D
ISTD PassFail Pass

QC Analyte Table

Element	m/z	ISTD	TuneStep	Meas Value	Units	ExpValue	%Rec	QC1 Low	QC1 High	QC2 Low	QC2 High	QC Flag
Cr	52	45	1	92.25	ppb	100	92.3	85	115	90	110	
Cd	111	115	2	91.20	ppb	100	91.2	85	115	90	110	
Pb	208	209	2	103.18	ppb	100	103.2	85	115	90	110	

QC ISTD Table

Element	m/z	Tune Step	CPS	%RSD	Reference CPS	%Rec	Lower Limit	Upper Limit	QC Flag
Sc	45	1	163570	0.51	157012	104.2	60	125	
Sc	45	2	5080332	0.65	4724478	107.5	60	125	
Y	89	1	862084	0.69	834924	103.3	60	125	
Y	89	2	7119398	0.47	6574046	108.3	60	125	
In	115	1	1028970	0.66	995641	103.3	60	125	
In	115	2	6414313	0.58	5806836	110.5	60	125	
Tb	159	2	7464620	0.52	6807162	109.7	60	125	
Ho	165	2	6917396	0.51	6345752	109.0	60	125	
Bi	209	1	2079432	0.91	1942224	107.1	60	125	
Bi	209	2	4027874	0.55	3595552	112.0	60	125	

TuneStep	TuneFile
1	he.u
2	nogas.u

10-3-14


Sample Report

Sample Name	rinse	Data File Name	023SMPL.D
DataPath	D:\ICPMH\1\DATA\10-02-14.8	AcqDate	10/2/2014 14:14
Type	Sample	VialNumber	1303
Dilution	1	Comment	
Operator	MPyles	ISTDRefDataFileName	002CALB.D
SamplePassFail	Pass	ISTD PassFail	Pass

QC Analyte Table

Element	m/z	ISTD	Tune Step	Meas Value	FinalConcentration	Units	High Value	QC Flag
Cr	52	45	1	-0.05	-0.05	ppb	500	
Cd	111	115	2	-0.01	-0.01	ppb	500	
Pb	208	209	2	0.02	0.02	ppb	500	

QC ISTD Table

Element	m/z	Tune Step	CPS	%RSD	Reference CPS	%Recovery	Lower Limit	Upper Limit	QC Flag
Sc	45	1	170935	10.76	157012	108.9	60	125	
Sc	45	2	5283819	0.49	4724478	111.8	60	125	
Y	89	1	929767	15.26	834924	111.4	60	125	
Y	89	2	7230119	0.32	6574046	110.0	60	125	
In	115	1	1118848	15.15	995641	112.4	60	125	
In	115	2	6453048	1.17	5806836	111.1	60	125	
Tb	159	2	7307811	0.80	6807162	107.4	60	125	
Ho	165	2	6827333	0.95	6345752	107.6	60	125	
Bi	209	1	2152741	11.00	1942224	110.8	60	125	
Bi	209	2	3994277	0.85	3595552	111.1	60	125	

TuneStep	TuneFile
1	he.u
2	nogas.u

Laboratory Reagent Blank (LRB) - US EPA Method 200.8

Sample Name	Method Blank	Data File Name	024SMPL.D
DataPath	D:\ICPMH\1\DATA\10-02-14.B	AcqDate	10/2/2014 14:20
Type	2-LRB	VialNumber	2201
Dilution	1	Comment	
Operator	MPyles	ISTDRefDataFileName	002CALB.D
SamplePassFail	Pass	ISTD PassFail	Pass

QC Analyte Table

Element	m/z	ISTD	Tune Step	Meas Value	Units	QC High	QC Flag
Cr	52	45	1	-0.02	ppb	1.1	
Cd	111	115	2	0.00	ppb	1.1	
Pb	208	209	2	0.67	ppb	1.1	

QC ISTD Table

Element	m/z	Tune Step	CPS	%RSD	Reference CPS	%Recovery	Lower Limit	Upper Limit	QC Flag
Sc	45	1	173460	1.19	157012	110.5	60	125	
Sc	45	2	5490040	0.99	4724478	116.2	60	125	
Y	89	1	907453	0.85	834924	108.7	60	125	
Y	89	2	7563560	0.85	6574046	115.1	60	125	
In	115	1	1084668	0.79	995641	108.9	60	125	
In	115	2	6737251	0.16	5806836	116.0	60	125	
Tb	159	2	7918413	1.42	6807162	116.3	60	125	
Ho	165	2	7372336	0.31	6345752	116.2	60	125	
Bi	209	1	2215795	0.87	1942224	114.1	60	125	
Bi	209	2	4277082	1.00	3595552	119.0	60	125	

TuneStep	TuneFile	TuneDate
1	he.u	10/2/2014 2:19:00 PM
2	nogas.u	10/2/2014 2:19:00 PM

10/2/14
⑤

Laboratory Reagent Blank (LRB) - US EPA Method 200.8

Sample Name	LRB	Data File Name	025SMPL.D
Data Path	D:\ICPMH\1\DATA\10-02-14.B	AcqDate	10/2/2014 14:27
Type	2-LRB	VialNumber	2202
Dilution	1	Comment	
Operator	MPyles	ISTDRefDataFileName	002CALB.D
SamplePassFail	Pass	ISTD PassFail	Pass

QC Analyte Table

Element	m/z	ISTD	Tune Step	Meas Value	Units	QC High	QC Flag
Cr	52	45	1	-0.03	ppb	1.1	
Cd	111	115	2	-0.01	ppb	1.1	
Pb	208	209	2	0.00	ppb	1.1	

QC ISTD Table

Element	m/z	Tune Step	CPS	%RSD	Reference CPS	%Recovery	Lower Limit	Upper Limit	QC Flag
Sc	45	1	165646	0.10	157012	105.5	60	125	
Sc	45	2	5140051	0.60	4724478	108.8	60	125	
Y	89	1	872084	0.67	834924	104.5	60	125	
Y	89	2	7122207	0.62	6574046	108.3	60	125	
In	115	1	1034589	0.64	995641	103.9	60	125	
In	115	2	6340530	0.43	5806836	109.2	60	125	
Tb	159	2	7488818	0.25	6807162	110.0	60	125	
Ho	165	2	6941446	1.03	6345752	109.4	60	125	
Bi	209	1	2082397	0.83	1942224	107.2	60	125	
Bi	209	2	4049517	0.52	3595552	112.6	60	125	

TuneStep	TuneFile	TuneDate
1	he.u	10/2/2014 2:25:00 PM
2	nogas.u	10/2/2014 2:25:00 PM

10-2-14
②

Laboratory Fortified Blank (LFB) - US EPA Method 200.8

Sample Name	LFB	Data File Name	026SMPL.D
DataPath	D:\ICPMH\1\DATA\10-02-14.B	AcqDate	10/2/2014 14:34
Type	2-LFB	VialNumber	2203
Dilution	1	Comment	
Operator	MPyles	ISTDRefDataFileName	002CALB.D
SamplePassFail	Pass	ISTD PassFail	Pass

QC Analyte Table

Element	m/z	ISTD	Tune Step	Conc.	Units	Spike Amt	%Recovery	%QC Low	%QC High	QC Flag
Cr	52	45	1	94.33	ppb	100	94.4	85	115	
Cd	111	115	2	93.03	ppb	100	93.0	85	115	
Pb	208	209	2	104.25	ppb	100	104.3	85	115	

QC ISTD Table

Element	m/z	Tune Step	CPS	%RSD	Reference CPS	%Recovery	Lower Limiy	Upper Limit	QC Flag
Sc	45	1	163292	1.56	157012	104.0	60	125	
Sc	45	2	5143422	0.64	4724478	108.9	60	125	
Y	89	1	855454	0.60	834924	102.5	60	125	
Y	89	2	7150974	0.73	6574046	108.8	60	125	
In	115	1	1019361	0.58	995641	102.4	60	125	
In	115	2	6366001	0.13	5806836	109.6	60	125	
Tb	159	2	7470827	0.41	6807162	109.7	60	125	
Ho	165	2	7040962	0.50	6345752	111.0	60	125	
Bi	209	1	2089699	1.01	1942224	107.6	60	125	
Bi	209	2	4054564	0.74	3595552	112.8	60	125	

TuneStep	TuneFile
1	he.u
2	nogas.u

10-2-14
②

Sample Report

Sample Name	aa63945 1:10	Data File Name	027SMPL.D
DataPath	D:\ICPMH\1\DATA\10-02-14.B	AcqDate	10/2/2014 14:41
Type	Sample	VialNumber	2204
Dilution	1	Comment	
Operator	MPyles	ISTDRefDataFileName	002CALB.D
SamplePassFail	Pass	ISTD PassFail	Pass

QC Analyte Table

Element	m/z	ISTD	Tune Step	Meas Value	FinalConcentration	Units	High Value	QC Flag
Cr	52	45	1	28.24	28.24	ppb	500	
Cd	111	115	2	378.32	378.32	ppb	500	
Pb	208	209	2	0.64	0.64	ppb	500	

QC ISTD Table

Element	m/z	Tune Step	CPS	%RSD	Reference CPS	%Recovery	Lower Limit	Upper Limit	QC Flag
Sc	45	1	162936	0.47	157012	103.8	60	125	
Sc	45	2	5167342	0.70	4724478	109.4	60	125	
Y	89	1	872675	0.75	834924	104.5	60	125	
Y	89	2	7258275	0.86	6574046	110.4	60	125	
In	115	1	1032562	0.18	995641	103.7	60	125	
In	115	2	6311989	0.93	5806836	108.7	60	125	
Tb	159	2	7406405	0.26	6807162	108.8	60	125	
Ho	165	2	6891261	0.33	6345752	108.6	60	125	
Bi	209	1	2047442	0.77	1942224	105.4	60	125	
Bi	209	2	3944484	0.12	3595552	109.7	60	125	

TuneStep	TuneFile
1	he.u
2	nogas.u

Chromium

$$28.24 \times 10 = 282.4 = \textcircled{282}$$

Cadmium

$$378.32 \times 10 = 3783.2 = \textcircled{3780}$$

Lead

$$0.64 \times 10 = \textcircled{6.40}$$

10-2-14
⑥

Sample Report

Sample Name 0.5 ppb (LLCV)
DataPath D:\ICPMH\1\DATA\10-02-14.B
Type Sample
Dilution 1
Operator MPyles
SamplePassFail Pass

Data File Name 034SMPL.D
AcqDate 10/2/2014 15:29
VialNumber 1102
Comment
ISTDRefDataFileName 002CALB.D
ISTD PassFail Pass

QC Analyte Table

Element	m/z	ISTD	Tune Step	Meas Value	FinalConcentration	Units	High Value	QC Flag
Cr	52	45	1	0.45	0.45	ppb	500	
Cd	111	115	2	0.46	0.46	ppb	500	
Pb	208	209	2	0.47	0.47	ppb	500	

QC ISTD Table

Element	m/z	Tune Step	CPS	%RSD	Reference CPS	%Recovery	Lower Limit	Upper Limit	QC Flag
Sc	45	1	157775	5.97	157012	100.5	60	125	
Sc	45	2	5112847	0.57	4724478	108.2	60	125	
Y	89	1	831473	5.09	834924	99.6	60	125	
Y	89	2	7140042	0.34	6574046	108.6	60	125	
In	115	1	990095	5.16	995641	99.4	60	125	
In	115	2	6380945	0.42	5806836	109.9	60	125	
Tb	159	2	7519936	0.79	6807162	110.5	60	125	
Ho	165	2	6968571	0.61	6345752	109.8	60	125	
Bi	209	1	1967461	5.37	1942224	101.3	60	125	
Bi	209	2	3995329	1.13	3595552	111.1	60	125	

TuneStep	TuneFile
1	he.u
2	nogas.u

10-3-14
⑥

Continuing Calibration Verification (CCV) - US EPA Method 200.8

Sample Name CCV
DataPathName D:\ICPMH\1\DATA\10-02-14.B
Type 2-CCV
Dilution 1
Operator MPyles
SamplePassFail Pass

Data File Name 035SMPL.D
AcqDate 10/2/2014 15:35
VialNumber 1105
Comment
ISTD Ref File 002CALB.D
ISTD PassFail Pass

QC Analyte Table

Element	m/z	ISTD	TuneStep	Meas Value	Units	ExpValue	%Rec	QC1 Low	QC1 High	QC2 Low	QC2 High	QC Flag
Cr	52	45	1	94.43	ppb	100	94.4	85	115	90	110	
Cd	111	115	2	95.01	ppb	100	95.0	85	115	90	110	
Pb	208	209	2	105.69	ppb	100	105.7	85	115	90	110	

QC ISTD Table

Element	m/z	Tune Step	CPS	%RSD	Reference CPS	%Rec	Lower Limit	Upper Limit	QC Flag
Sc	45	1	161998	1.60	157012	103.2	60	125	
Sc	45	2	5113069	0.59	4724478	108.2	60	125	
Y	89	1	882522	7.07	834924	105.7	60	125	
Y	89	2	7057932	0.33	6574046	107.4	60	125	
In	115	1	1054796	6.91	995641	105.9	60	125	
In	115	2	6352590	0.64	5806836	109.4	60	125	
Tb	159	2	7385328	0.68	6807162	108.5	60	125	
Ho	165	2	6925849	0.48	6345752	109.1	60	125	
Bi	209	1	2044552	1.47	1942224	105.3	60	125	
Bi	209	2	3999248	0.92	3595552	111.2	60	125	

TuneStep	TuneFile
1	he.u
2	nogas.u

10-3-14
②

Continuing Calibration Verification (CCV) - US EPA Method 200.8

Sample Name SCP Science 100 DataPathName D:\ICPMH\1\DATA\10-02-14.B Type 2-CCV Dilution 1 Operator MPyles SamplePassFail Pass	Data File Name 036SMPL.D AcqDate 10/2/2014 15:42 VialNumber 1301 Comment ISTD Ref File 002CALB.D ISTD PassFail Pass
----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------	------------------------------------------------------------------------------------------------------------------------------------------------------------------------------

QC Analyte Table

Element	m/z	ISTD	TuneStep	Meas Value	Units	ExpValue	%Rec	QC1 Low	QC1 High	QC2 Low	QC2 High	QC Flag
Cr	52	45	1	92.74	ppb	100	92.7	85	115	90	110	
Cd	111	115	2	90.54	ppb	100	90.5	85	115	90	110	
Pb	208	209	2	102.45	ppb	100	102.4	85	115	90	110	

QC ISTD Table

Element	m/z	Tune Step	CPS	%RSD	Reference CPS	%Rec	Lower Limit	Upper Limit	QC Flag
Sc	45	1	161627	0.47	157012	102.9	60	125	
Sc	45	2	5076812	0.82	4724478	107.5	60	125	
Y	89	1	853964	0.75	834924	102.3	60	125	
Y	89	2	7032198	0.43	6574046	107.0	60	125	
In	115	1	1019443	0.05	995641	102.4	60	125	
In	115	2	6381957	0.65	5806836	109.9	60	125	
Tb	159	2	7416861	0.54	6807162	109.0	60	125	
Ho	165	2	6957318	0.52	6345752	109.6	60	125	
Bi	209	1	2059460	0.77	1942224	106.0	60	125	
Bi	209	2	4008071	0.36	3595552	111.5	60	125	

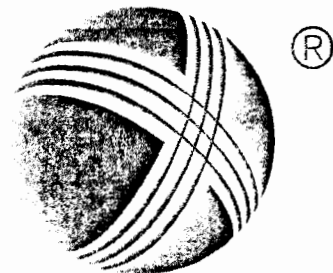
TuneStep	TuneFile
1	he.u
2	nogas.u

10-3-14
⑥

oclark

 file:///C:/Users/oclark/AppData/Local/Temp/notes
 01/06/15 03:59 PM

xerox



Manifest 000601487VES

Michaelis, David

to:

otis_clark

01/06/2015 03:13 PM

Cc:

Stephen Wood, Janet Kellum

Hide Details

From: "Michaelis, David" <david.michaelis@veolia.com>

To: otis_clark@deq.state.ms.us,

Cc: Stephen Wood <stephen.wood2@veolia.com>, Janet Kellum
<janet.kellum@veolia.com>

Security:

To ensure privacy, images from remote sites were prevented from downloading. Show
Images

History: This message has been replied to.

Otis,

Below is my contact information. I am in search of the manifest and Certificate of Disposal, and we will get that to you as soon as I can. I will have Stephen and Janet follow up with you. They are the Account Manager and Technical Account Representative (respectively) follow up with you with that information.

Thanks

David E. Michaelis

Sales Manager

Industrial Business

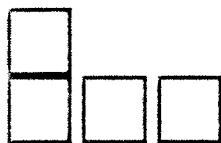
VEOLIA NORTH AMERICA

tel +1 409 736 4167 / cell +1 281 216 9618

1800 S. Hwy 146 (Business) / Baytown, TX 77520

david.michaelis@veolia.com

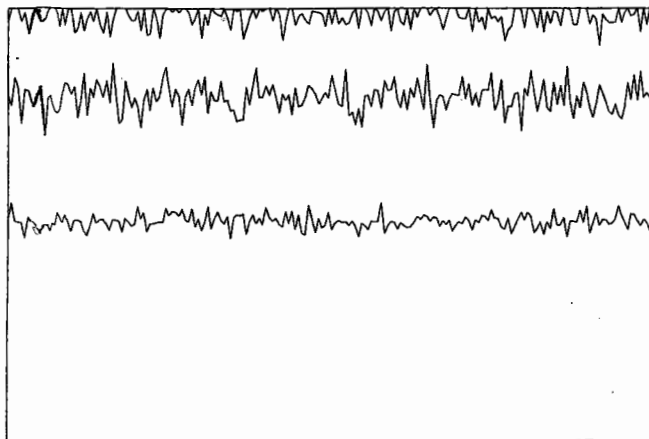
www.veolianorthamerica.com



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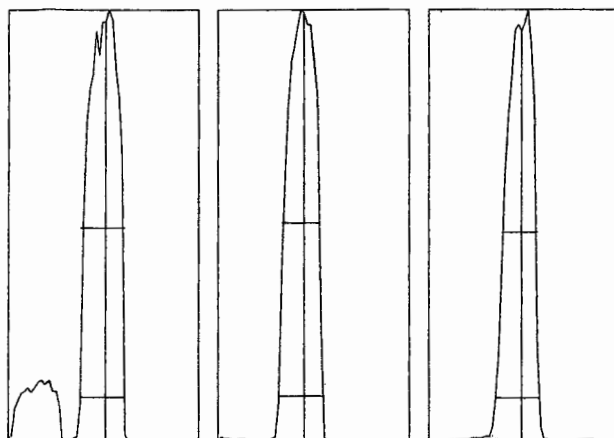
Tune Report

Tune File : nogas.u
Comment : 6-18-14



Integration Time: 0.1000 sec
Sampling Period: 0.3100 sec
n: 200
Oxide: 156/140 1.281%
Doubly Charged: 70/140 1.468%

m/z	Range	Count	Mean	RSD%	Background
7	2,000	1523.0	1587.3	4.06	14.80
89	10,000	10020.0	9863.6	2.76	15.60
205	10,000	5228.0	5099.3	3.16	46.60



m/z:	7	89	205
Height:	1,594	10,337	4,986
Axis:	7.05	88.90	205.00
W-50%:	0.70	0.60	0.55
W-10%:	0.700	0.700	0.700

Integration Time: 0.1000 sec
Acquisition Time: 22.7600 sec

Y axis : Linear

Tune Report

Tune File : nogas.u
Comment : 6-18-14

Tuning Parameters

===Plasma Condition===

RF Power : 1550 W
RF Matching : 1.8 V
Smpl Depth : 8 mm
Torch-H : -0.7 mm
Torch-V : -0.2 mm
Carrier Gas : 0.75 L/min
Dilution Mode : OFF
Makeup Gas : 0.1 L/min
Optional Gas : --- %
Nebulizer Pump : 0.1 rps
Sample Pump : --- rps
S/C Temp : 2 degC

===Ion Lenses===

Extract 1 : 0 V
Extract 2 : -195 V
Omega Bias : -80 V
Omega Lens : 9.6 V
Cell Entrance : -40 V
Cell Exit : -60 V
Deflect : 15 V
Plate Bias : -40 V
===Octopole Parameters===
OctP RF : 190 V
OctP Bias : -8 V

===Q-Pole Parameters===

AMU Gain : 140
AMU Offset : 127
Axis Gain : 1.0015
Axis Offset : 0.04
QP Bias : -3 V

===Detector Parameters===

Discriminator : 4.5 mV
Analog HV : 1872 V
Pulse HV : 1541 V

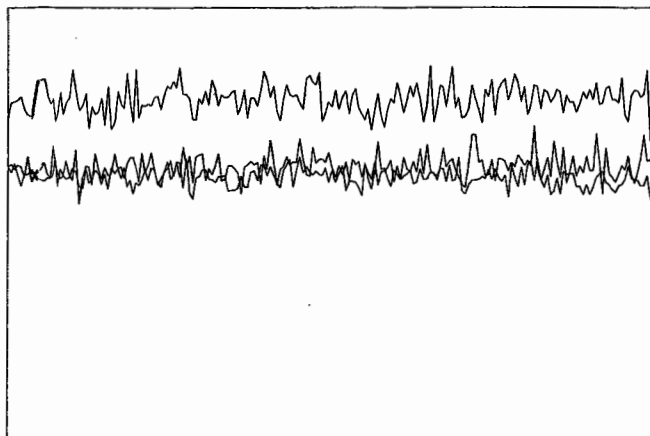
===Reaction Cell===

Reaction Mode : OFF
H2 Gas : --- mL/min

He Gas : 0 mL/min
Optional Gas : --- %

Tune Report

Tune File : he.u
Comment : 6-18-14



Integration Time: 0.1000 sec
Sampling Period: 0.3100 sec
n: 200
Oxide: 156/140 0.593%
Doubly Charged: 70/140 0.892%

m/z	Range	Count	Mean	RSD%	Background
59	2,000	1659.0	1582.0	4.03	0.80
89	2,000	1283.0	1273.5	4.24	1.80
205	5,000	2754.0	3059.9	3.55	3.00

Tuning Parameters

===Plasma Condition===

RF Power : 1550 W
RF Matching : 1.8 V
Smp1 Depth : 8 mm
Torch-H : -0.7 mm
Torch-V : -0.2 mm
Carrier Gas : 0.75 L/min
Dilution Mode : OFF
Makeup Gas : 0.1 L/min
Optional Gas : --- %
Nebulizer Pump : 0.1 rps
Sample Pump : --- rps
S/C Temp : 2 degC

===Ion Lenses===

Extract 1 : 0 V
Extract 2 : -195 V
Omega Bias : -80 V
Omega Lens : 9.6 V
Cell Entrance : -40 V
Cell Exit : -60 V
Deflect : 1.8 V
Plate Bias : -60 V
===Octopole Parameters===
OctP RF : 190 V
OctP Bias : -18 V

===Q-Pole Parameters===

AMU Gain : 140
AMU Offset : 127
Axis Gain : 1.0015
Axis Offset : 0.04
QP Bias : -15 V

===Detector Parameters===

Discriminator : 4.5 mV
Analog HV : 1872 V
Pulse HV : 1541 V

===Reaction Cell===

Reaction Mode : ON
H2 Gas : --- mL/min
He Gas : 4.3 mL/min
Optional Gas : --- %

P/A Factor Tuning Report

Acquired: Jun 18 2014 09:21 am

Mass[amu]	Element	P/A Factor
45	Sc	0.115573
89	Y	0.132872
111	Cd	0.144259
114	(Cd)	0.145124
115	In	0.144126
118	(In)	Sensitivity too low
159	Tb	0.148996
165	Ho	0.150479
209	Bi	0.157519

===Detector Parameters===

Discriminator: 4.5 mV
Analog HV: 1872 V
Pulse HV: 1541 V

D:\ICPMH\1\7500\qctune.d

QC Tune Report

Data File: D:\ICPMH\1\7500\QCTUNE.D
Date Acquired: 18 Jun 2014 09:27:13 am
Operator:
Misc Info:
Vial Number: 0
Current Method: D:\ICPMH\1\METHODS\TN6020.m

Minimum Response(CPS)

Element	Actual	Required	Flag
---------	--------	----------	------

RSD (%)

Element	Actual	Required	Flag
---------	--------	----------	------

7 Li	0.98	5.00	
59 Co	1.01	5.00	
115 In	0.99	5.00	
205 Tl	0.41	5.00	

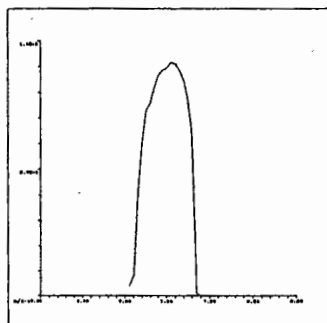
Ion Ratio

Element	Actual	Required	Flag
---------	--------	----------	------

Maximum Bkg. Count (CPS)

Element	Actual	Required	Flag
---------	--------	----------	------

D:\ICPMH\1\7500\qctune.d



7 Li

Mass Calib.

Actual: 7.05

Required: 6.90-7.10

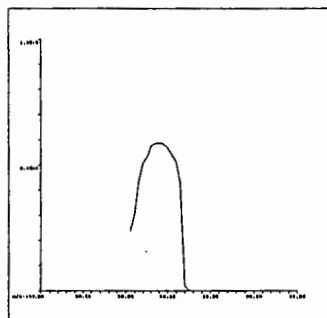
Flag:

Peak Width

Actual: 0.65

Required: 0.75

Flag:



59 Co

Mass Calib.

Actual: 58.90

Required: 58.90-59.10

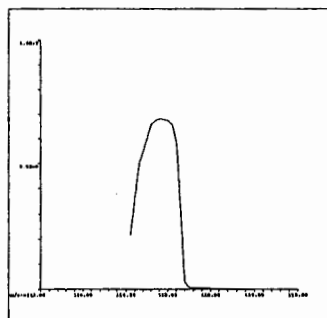
Flag:

Peak Width

Actual: 0.60

Required: 0.75

Flag:



115 In

Mass Calib.

Actual: 114.95

Required: 114.90-115.10

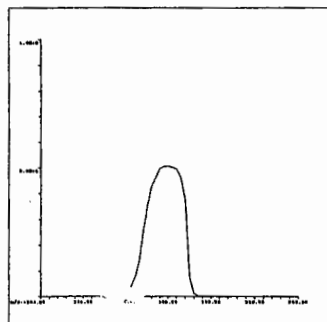
Flag:

Peak Width

Actual: 0.60

Required: 0.75

Flag:



205 Tl

Mass Calib.

Actual: 205.00

Required: 204.90-205.10

Flag:

Peak Width

Actual: 0.65

Required: 0.75

Flag:

QC Tune Result:Pass

Calibration Blank Report

Sample Name Cal blank
DataPath D:\ICPMH\1\DATA\6-18-14C.B
Type CalBlk
Dilution 1

Data File Name 001CALB.D
AcqDate 6/18/2014 12:49
VialNumber 1101
Comment

QC Analyte Table

Element	m/z	ISTD	Tune Step	CPS	%RSD
(Cd)	106	115	2	3649	2.84
(Cd)	108	115	2	59	21.43
Cd	111	115	2	389	5.57
(Cd)	114	115	2	952	5.27

QC ISTD Table

Element	m/z	Tune Step	CPS	%RSD
Sc	45	1	147457	2.27
Sc	45	2	4311993	0.54
Y	89	1	840999	1.93
Y	89	2	6674010	0.34
In	115	1	1055216	1.29
In	115	2	6183889	0.94
Tb	159	2	7575705	1.16
Ho	165	2	7111494	0.49
Bi	209	1	2233454	1.16
Bi	209	2	4349047	0.45

TuneStep	TuneFile
1	he.u
2	nogas.u

Calibration Blank Report

Sample Name Cal blank
DataPath D:\ICPMH\1\DATA\6-18-14C.B
Type CalBlk
Dilution 1

Data File Name 002CALB.D
AcqDate 6/18/2014 12:56
VialNumber 1101
Comment

QC Analyte Table

Element	m/z	ISTD	Tune Step	CPS	%RSD
(Cd)	106	115	2	3803	3.73
(Cd)	108	115	2	37	15.76
Cd	111	115	2	298	11.42
(Cd)	114	115	2	763	4.72

QC ISTD Table

Element	m/z	Tune Step	CPS	%RSD
Sc	45	1	158676	0.82
Sc	45	2	4275233	0.41
Y	89	1	894674	0.57
Y	89	2	6551865	0.11
In	115	1	1118000	0.40
In	115	2	6059092	0.91
Tb	159	2	7343529	0.64
Ho	165	2	6896126	0.60
Bi	209	1	2263102	0.97
Bi	209	2	4191215	1.90

TuneStep	TuneFile
1	he.u
2	nogas.u

Calibration Standard Report

Sample Name 0.5 ppb
DataPath D:\ICPMH\1\DATA\6-18-14C.B
Type CalStd
Dilution 1
Operator EScarbrough

Data File Name 001CAL.S.D
AcqDate 6/18/2014 13:03
VialNumber 1102
Comment
ISTDRefDataFileName 002CALB.D

QC Analyte Table

Element	m/z	ISTD	Tune Step	CPS	%RSD
(Cd)	106	115	2	4013	3.13
(Cd)	108	115	2	333	7.00
Cd	111	115	2	4138	3.02
(Cd)	114	115	2	9686	2.62

QC ISTD Table

Element	m/z	Tune Step	CPS	%RSD	Reference CPS	%Recovery	Lower Limit	Upper Limit	QC Flag
Sc	45	1	156677	0.21	158676	98.7	60	125	
Sc	45	2	4289678	1.92	4275233	100.3	60	125	
Y	89	1	891263	1.02	894674	99.6	60	125	
Y	89	2	6578722	1.48	6551865	100.4	60	125	
In	115	1	1110545	0.13	1118000	99.3	60	125	
In	115	2	6115085	1.52	6059092	100.9	60	125	
Tb	159	2	7484542	0.85	7343529	101.9	60	125	
Ho	165	2	7071848	1.21	6896126	102.5	60	125	
Bi	209	1	2263171	1.24	2263102	100.0	60	125	
Bi	209	2	4271094	1.46	4191215	101.9	60	125	

TuneStep	TuneFile
1	he.u
2	nogas.u

Calibration Standard Report

Sample Name	1.0 ppb	Data File Name	002CAL.S.D
DataPath	D:\ICPMH\1\DATA\6-18-14C.B	AcqDate	6/18/2014 13:10
Type	CalStd	VialNumber	1103
Dilution	1	Comment	
Operator	EScarbrough	ISTDRefDataFileName	002CALB.D

QC Analyte Table

Element	m/z	ISTD	Tune Step	CPS	%RSD
(Cd)	106	115	2	4513	4.99
(Cd)	108	115	2	534	5.00
Cd	111	115	2	7956	0.98
(Cd)	114	115	2	18688	1.85

QC ISTD Table

Element	m/z	Tune Step	CPS	%RSD	Reference CPS	%Recovery	Lower Limit	Upper Limit	QC Flag
Sc	45	1	157901	1.50	158676	99.5	60	125	
Sc	45	2	4247103	0.51	4275233	99.3	60	125	
Y	89	1	895993	1.50	894674	100.1	60	125	
Y	89	2	6571038	0.93	6551865	100.3	60	125	
In	115	1	1111263	1.98	1118000	99.4	60	125	
In	115	2	6038861	1.09	6059092	99.7	60	125	
Tb	159	2	7269318	0.14	7343529	99.0	60	125	
Ho	165	2	6803074	0.38	6896126	98.7	60	125	
Bi	209	1	2240294	2.35	2263102	99.0	60	125	
Bi	209	2	4147279	0.48	4191215	99.0	60	125	

TuneStep	TuneFile
1	he.u
2	nogas.u

Calibration Standard Report

Sample Name	10 ppb	Data File Name	003CALS.D
DataPath	D:\ICPMH\1\DATA\6-18-14C.B	AcqDate	6/18/2014 13:17
Type	CalStd	VialNumber	1104
Dilution	1	Comment	
Operator	EScarbrough	ISTDRefDataFileName	002CALB.D

QC Analyte Table

Element	m/z	ISTD	Tune Step	CPS	%RSD
(Cd)	106	115	2	11002	3.15
(Cd)	108	115	2	5414	7.93
Cd	111	115	2	78489	0.34
(Cd)	114	115	2	182279	0.48

QC ISTD Table

Element	m/z	Tune Step	CPS	%RSD	Reference CPS	%Recovery	Lower Limit	Upper Limit	QC Flag
Sc	45	1	157778	0.45	158676	99.4	60	125	
Sc	45	2	4290531	3.49	4275233	100.4	60	125	
Y	89	1	894658	1.03	894674	100.0	60	125	
Y	89	2	6586099	3.55	6551865	100.5	60	125	
In	115	1	1108076	0.60	1118000	99.1	60	125	
In	115	2	6127184	3.45	6059092	101.1	60	125	
Tb	159	2	7406499	3.98	7343529	100.9	60	125	
Ho	165	2	6897729	3.38	6896126	100.0	60	125	
Bi	209	1	2212922	0.49	2263102	97.8	60	125	
Bi	209	2	4186551	2.61	4191215	99.9	60	125	

TuneStep	TuneFile
1	he.u
2	nogas.u

Calibration Standard Report

Sample Name	100 ppb	Data File Name	004CAL.S.D
DataPath	D:\ICPMH\1\DATA\6-18-14C.B	AcqDate	6/18/2014 13:24
Type	CalStd	VialNumber	1105
Dilution	1	Comment	
Operator	EScarbrough	ISTDRefDataFileName	002CALB.D

QC Analyte Table

Element	m/z	ISTD	Tune Step	CPS	%RSD
(Cd)	106	115	2	78038	0.95
(Cd)	108	115	2	54894	0.68
Cd	111	115	2	799444	0.22
(Cd)	114	115	2	1915539	0.77

QC ISTD Table

Element	m/z	Tune Step	CPS	%RSD	Reference CPS	%Recovery	Lower Limit	Upper Limit	QC Flag
Sc	45	1	159239	0.68	158676	100.4	60	125	
Sc	45	2	4280990	0.58	4275233	100.1	60	125	
Y	89	1	899493	0.58	894674	100.5	60	125	
Y	89	2	6563611	0.05	6551865	100.2	60	125	
In	115	1	1112311	0.63	1118000	99.5	60	125	
In	115	2	6110065	0.49	6059092	100.8	60	125	
Tb	159	2	7366718	0.88	7343529	100.3	60	125	
Ho	165	2	6918045	0.84	6896126	100.3	60	125	
Bi	209	1	2231217	0.40	2263102	98.6	60	125	
Bi	209	2	4184661	1.65	4191215	99.8	60	125	

TuneStep	TuneFile
1	he.u
2	nogas.u

Calibration Standard Report

Sample Name	200 ppb	Data File Name	005CALS.D
DataPath	D:\ICPMH\1\DATA\6-18-14C.B	AcqDate	6/18/2014 13:30
Type	CalStd	VialNumber	1106
Dilution	1	Comment	
Operator	EScarbrough	ISTDRefDataFileName	002CALB.D

QC Analyte Table

Element	m/z	ISTD	Tune Step	CPS	%RSD
(Cd)	106	115	2	150776	0.15
(Cd)	108	115	2	108110	0.36
Cd	111	115	2	1643213	0.55
(Cd)	114	115	2	3770618	0.87

QC ISTD Table

Element	m/z	Tune Step	CPS	%RSD	Reference CPS	%Recovery	Lower Limit	Upper Limit	QC Flag
Sc	45	1	157974	0.33	158676	99.6	60	125	
Sc	45	2	4235334	0.92	4275233	99.1	60	125	
Y	89	1	897833	0.68	894674	100.4	60	125	
Y	89	2	6559287	1.02	6551865	100.1	60	125	
In	115	1	1107832	0.32	1118000	99.1	60	125	
In	115	2	6085365	0.27	6059092	100.4	60	125	
Tb	159	2	7372001	0.45	7343529	100.4	60	125	
Ho	165	2	6911100	0.99	6896126	100.2	60	125	
Bi	209	1	2222619	0.37	2263102	98.2	60	125	
Bi	209	2	4192004	1.27	4191215	100.0	60	125	

TuneStep	TuneFile
1	he.u
2	nogas.u

Calibration Standard Report

Sample Name 500 ppb
DataPath D:\ICPMH\1\DATA\6-18-14C.B
Type CalStd
Dilution 1
Operator EScarbrough

Data File Name 006CALS.D
AcqDate 6/18/2014 13:37
VialNumber 1107
Comment
ISTDRefDataFileName 002CALB.D

QC Analyte Table

Element	m/z	ISTD	Tune Step	CPS	%RSD
(Cd)	106	115	2	367010	0.18
(Cd)	108	115	2	264893	0.80
Cd	111	115	2	3985756	0.15
(Cd)	114	115	2	9311008	0.42

QC ISTD Table

Element	m/z	Tune Step	CPS	%RSD	Reference CPS	%Recovery	Lower Limit	Upper Limit	QC Flag
Sc	45	1	157698	0.81	158676	99.4	60	125	
Sc	45	2	4261671	0.74	4275233	99.7	60	125	
Y	89	1	894932	0.59	894674	100.0	60	125	
Y	89	2	6487640	0.66	6551865	99.0	60	125	
In	115	1	1108969	0.64	1118000	99.2	60	125	
In	115	2	6008652	0.60	6059092	99.2	60	125	
Tb	159	2	7281274	0.80	7343529	99.2	60	125	
Ho	165	2	6900486	1.25	6896126	100.1	60	125	
Bi	209	1	2222171	0.70	2263102	98.2	60	125	
Bi	209	2	4160331	0.29	4191215	99.3	60	125	

TuneStep	TuneFile
1	he.u
2	nogas.u

Sample Report

Sample Name rinse
DataPath D:\ICPMH\1\DATA\6-18-14C.B
Type Sample
Dilution 1
Operator EScarbrough
SamplePassFail Pass

Data File Name 001SMPL.D
AcqDate 6/18/2014 13:44
VialNumber 1303
Comment
ISTDRefDataFileName 002CALB.D
ISTD PassFail Pass

QC Analyte Table

Element	m/z	ISTD	Tune Step	Meas Value	FinalConcentration	Units	High Value	QC Flag
(Cd)	106	115	2	-0.09	-0.09	ppb	450	
(Cd)	108	115	2	0.02	0.02	ppb	450	
Cd	111	115	2	-0.02	-0.02	ppb	450	
(Cd)	114	115	2	-0.03	-0.03	ppb	450	

QC ISTD Table

Element	m/z	Tune Step	CPS	%RSD	Reference CPS	%Recovery	Lower Limit	Upper Limit	QC Flag
Sc	45	1	168002	0.11	158676	105.9	60	125	
Sc	45	2	4497940	0.67	4275233	105.2	60	125	
Y	89	1	945838	0.27	894674	105.7	60	125	
Y	89	2	6632331	0.79	6551865	101.2	60	125	
In	115	1	1189531	0.20	1118000	106.4	60	125	
In	115	2	6157497	0.80	6059092	101.6	60	125	
Tb	159	2	7208099	0.81	7343529	98.2	60	125	
Ho	165	2	6745766	0.65	6896126	97.8	60	125	
Bi	209	1	2320713	1.02	2263102	102.5	60	125	
Bi	209	2	4172428	0.53	4191215	99.6	60	125	

TuneStep	TuneFile
1	he.u
2	nogas.u

Continuing Calibration Blank (CCB) - US EPA Method 200.8

Sample Name	ICB	Data File Name	002SMPL.D
DataPath	D:\ICPMH\1\DATA\6-18-14C.B	Acq Date Time	2014-06-18T13:51:22-05:00
Type	2-CCB	VialNumber	1101
Dilution	1	Comment	
Operator	EScarbrough	ISTDRefDataFileName	002CALB.D
SamplePassFail	Pass	ISTD PassFail	Pass

QC Analyte Table

Element	m/z	ISTD	Tune Step	Meas Value	Units	QC High	QC Flag
(Cd)	106	115	2	-0.18	ppb	1.1	
(Cd)	108	115	2	0.02	ppb	1.1	
Cd	111	115	2	-0.01	ppb	1.1	
(Cd)	114	115	2	-0.02	ppb	1.1	

QC ISTD Table

Element	m/z	Tune Step	CPS	%RSD	Reference CPS	%Recovery	Lower Limit	Upper Limit	QC Flag
Sc	45	1	160954	0.60	158676	101.4	60	125	
Sc	45	2	4243148	0.66	4275233	99.2	60	125	
Y	89	1	895619	0.18	894674	100.1	60	125	
Y	89	2	6547102	0.73	6551865	99.9	60	125	
In	115	1	1115368	0.18	1118000	99.8	60	125	
In	115	2	5996368	0.65	6059092	99.0	60	125	
Tb	159	2	7310898	0.62	7343529	99.6	60	125	
Ho	165	2	6855534	1.30	6896126	99.4	60	125	
Bi	209	1	2215778	1.14	2263102	97.9	60	125	
Bi	209	2	4106730	0.51	4191215	98.0	60	125	

TuneStep	TuneFile
1	he.u
2	nogas.u

Sample Report

Sample Name 0.5 ppb (LLICV)
DataPath D:\ICPMH\1\DATA\6-18-14C.B
Type Sample
Dilution 1
Operator EScarbrough
SamplePassFail Pass

Data File Name 003SMPL.D
AcqDate 6/18/2014 13:58
VialNumber 1102
Comment
ISTDRefDataFileName 002CALB.D
ISTD PassFail Pass

QC Analyte Table

Element	m/z	ISTD	Tune Step	Meas Value	FinalConcentration	Units	High Value	QC Flag
(Cd)	106	115	2	0.15	0.15	ppb	450	
(Cd)	108	115	2	0.50	0.50	ppb	450	
Cd	111	115	2	0.47	0.47	ppb	450	
(Cd)	114	115	2	0.46	0.46	ppb	450	

QC ISTD Table

Element	m/z	Tune Step	CPS	%RSD	Reference CPS	%Recovery	Lower Limit	Upper Limit	QC Flag
Sc	45	1	160649	0.72	158676	101.2	60	125	
Sc	45	2	4212195	1.95	4275233	98.5	60	125	
Y	89	1	903129	1.88	894674	100.9	60	125	
Y	89	2	6444676	1.38	6551865	98.4	60	125	
In	115	1	1133945	2.74	1118000	101.4	60	125	
In	115	2	5899159	2.13	6059092	97.4	60	125	
Tb	159	2	7181410	1.51	7343529	97.8	60	125	
Ho	165	2	6792927	2.14	6896126	98.5	60	125	
Bi	209	1	2244081	1.29	2263102	99.2	60	125	
Bi	209	2	4057962	0.42	4191215	96.8	60	125	

TuneStep	TuneFile
1	he.u
2	nogas.u

Continuing Calibration Verification (CCV) - US EPA Method 200.8

Sample Name ICV
DataPathName D:\ICPMH\1\DATA\6-18-14C.B
Type 2-CCV
Dilution 1
Operator EScarbrough
SamplePassFail Pass

Data File Name 004SMPL.D
AcqDate 6/18/2014 14:05
VialNumber 1105
Comment
ISTD Ref File 002CALB.D
ISTD PassFail Pass

QC Analyte Table

Element	m/z	ISTD	TuneStep	Meas Value	Units	ExpValue	%Rec	QC1 Low	QC1 High	QC2 Low	QC2 High	QC Flag
(Cd)	106	115	2	100.95	ppb	100	101.0	85	115	90	110	
(Cd)	108	115	2	99.98	ppb	100	100.0	85	115	90	110	
Cd	111	115	2	98.76	ppb	100	98.8	85	115	90	110	
(Cd)	114	115	2	101.93	ppb	100	101.9	85	115	90	110	

QC ISTD Table

Element	m/z	Tune Step	CPS	%RSD	Reference CPS	%Rec	Lower Limit	Upper Limit	QC Flag
Sc	45	1	160085	0.47	158676	100.9	60	125	
Sc	45	2	4306176	0.53	4275233	100.7	60	125	
Y	89	1	894338	0.76	894674	100.0	60	125	
Y	89	2	6567725	0.80	6551865	100.2	60	125	
In	115	1	1103640	0.53	1118000	98.7	60	125	
In	115	2	6056989	0.57	6059092	100.0	60	125	
Tb	159	2	7411531	1.19	7343529	100.9	60	125	
Ho	165	2	6949998	0.71	6896126	100.8	60	125	
Bi	209	1	2212673	0.45	2263102	97.8	60	125	
Bi	209	2	4219364	0.37	4191215	100.7	60	125	

TuneStep	TuneFile
1	he.u
2	nogas.u

Continuing Calibration Verification (CCV) - US EPA Method 200.8

Sample Name SCP Science (100)
DataPathName D:\ICPMH\1\DATA\6-18-14C.B
Type 2-CCV
Dilution 1
Operator EScarbrough
SamplePassFail Pass

Data File Name 005SMPL.D
AcqDate 6/18/2014 14:11
VialNumber 1301
Comment
ISTD Ref File 002CALB.D
ISTD PassFail Pass

QC Analyte Table

Element	m/z	ISTD	TuneStep	Meas Value	Units	ExpValue	%Rec	QC1 Low	QC1 High	QC2 Low	QC2 High	QC Flag
(Cd)	106	115	2	96.97	ppb	100	97.0	85	115	90	110	
(Cd)	108	115	2	96.88	ppb	100	96.9	85	115	90	110	
Cd	111	115	2	96.52	ppb	100	96.5	85	115	90	110	
(Cd)	114	115	2	100.09	ppb	100	100.1	85	115	90	110	

QC ISTD Table

Element	m/z	Tune Step	CPS	%RSD	Reference CPS	%Rec	Lower Limit	Upper Limit	QC Flag
Sc	45	1	156930	0.74	158676	98.9	60	125	
Sc	45	2	4254493	0.90	4275233	99.5	60	125	
Y	89	1	881141	0.43	894674	98.5	60	125	
Y	89	2	6607500	1.05	6551865	100.8	60	125	
In	115	1	1095943	0.20	1118000	98.0	60	125	
In	115	2	6219327	0.56	6059092	102.6	60	125	
Tb	159	2	7551586	1.18	7343529	102.8	60	125	
Ho	165	2	7178180	1.75	6896126	104.1	60	125	
Bi	209	1	2232676	1.41	2263102	98.7	60	125	
Bi	209	2	4383628	0.52	4191215	104.6	60	125	

TuneStep	TuneFile
1	he.u
2	nogas.u

All Reference (AllRef) Sample Report

Sample Name aa61999 1:10
Data File Name 006SMPL.D
DataPath D:\ICPMH\1\DATA\6-18-14C.B
Acq Date Time 2014-06-18T14:18:39-05:00
AcqDate 6/18/2014 14:18
Type AllRef
VialNumber 2101
Dilution 1
Comment
Operator EScarbrough
ISTDRefDataFileName 002CALB.D
SamplePassFail Pass
ISTD PassFail Pass

QC Analyte Table

Element	m/z	ISTD	Tune Step	Meas Value	FinalConcentration	Units	High Value	QC Flag
Cd	111	115	2	204.11	204.11	ppb	450	

QC ISTD Table

Element	m/z	Tune Step	CPS	%RSD	Reference CPS	%Recovery	Lower Limit	Upper Limit	QC Flag
Sc	45	1	160672	1.59	158676	101.3	60	125	
Sc	45	2	4420909	0.31	4275233	103.4	60	125	
Y	89	1	898569	1.61	894674	100.4	60	125	
Y	89	2	6687106	0.77	6551865	102.1	60	125	
In	115	1	1123024	1.56	1118000	100.4	60	125	
In	115	2	6154419	1.29	6059092	101.6	60	125	
Tb	159	2	7332410	0.91	7343529	99.8	60	125	
Ho	165	2	6942331	0.38	6896126	100.7	60	125	
Bi	209	1	2229802	1.41	2263102	98.5	60	125	
Bi	209	2	4183530	0.61	4191215	99.8	60	125	

TuneStep	TuneFile
1	he.u
2	nogas.u

Reprint Report 1-5-15 (ES)

Sample Report

Sample Name aa61999 1:10
DataPath D:\ICPMH\1\DATA\6-18-14C.B
Type Sample
Dilution 1
Operator EScarbrough
SamplePassFail Pass

Data File Name 006SMPL.D
AcqDate 6/18/2014 14:18
VialNumber 2101
Comment
ISTDRefDataFileName 002CALB.D
ISTD PassFail Pass

QC Analyte Table

Element	m/z	ISTD	Tune Step	Meas Value	FinalConcentration	Units	High Value	QC Flag
(Cd)	106	115	2	201.13	201.13	ppb	450	
(Cd)	108	115	2	200.95	200.95	ppb	450	
Cd	111	115	2	204.11	204.11	ppb	450	
(Cd)	114	115	2	203.47	203.47	ppb	450	

QC ISTD Table

Element	m/z	Tune Step	CPS	%RSD	Reference CPS	%Recovery	Lower Limit	Upper Limit	QC Flag
Sc	45	1	160672	1.59	158676	101.3	60	125	
Sc	45	2	4420909	0.31	4275233	103.4	60	125	
Y	89	1	898569	1.61	894674	100.4	60	125	
Y	89	2	6687106	0.77	6551865	102.1	60	125	
In	115	1	1123024	1.56	1118000	100.4	60	125	
In	115	2	6154419	1.29	6059092	101.6	60	125	
Tb	159	2	7332410	0.91	7343529	99.8	60	125	
Ho	165	2	6942331	0.38	6896126	100.7	60	125	
Bi	209	1	2229802	1.41	2263102	98.5	60	125	
Bi	209	2	4183530	0.61	4191215	99.8	60	125	

TuneStep	TuneFile
1	he.u
2	nogas.u

Sample Report

Sample Name aa62000 1:10
DataPath D:\ICPMH\1\DATA\6-18-14C.B
Type Sample
Dilution 1
Operator EScarbrough
SamplePassFail Pass

Data File Name 007SMPL.D
AcqDate 6/18/2014 14:25
VialNumber 2102
Comment
ISTDRefDataFileName 002CALB.D
ISTD PassFail Pass

QC Analyte Table

Element	m/z	ISTD	Tune Step	Meas Value	FinalConcentration	Units	High Value	QC Flag
(Cd)	106	115	2	408.66	408.66	ppb	450	
(Cd)	108	115	2	411.99	411.99	ppb	450	
Cd	111	115	2	413.57	413.57	ppb	450	
(Cd)	114	115	2	410.32	410.32	ppb	450	

QC ISTD Table

Element	m/z	Tune Step	CPS	%RSD	Reference CPS	%Recovery	Lower Limit	Upper Limit	QC Flag
Sc	45	1	162867	1.68	158676	102.6	60	125	
Sc	45	2	4440951	0.64	4275233	103.9	60	125	
Y	89	1	904996	0.70	894674	101.2	60	125	
Y	89	2	6738261	0.38	6551865	102.8	60	125	
In	115	1	1127365	1.00	1118000	100.8	60	125	
In	115	2	6179435	0.70	6059092	102.0	60	125	
Tb	159	2	7395013	0.35	7343529	100.7	60	125	
Ho	165	2	6957888	0.37	6896126	100.9	60	125	
Bi	209	1	2239008	1.25	2263102	98.9	60	125	
Bi	209	2	4193097	0.83	4191215	100.0	60	125	

TuneStep	TuneFile
1	he.u
2	nogas.u

Sample Report

Sample Name	aa62002 1:10	Data File Name	008SMPL.D
DataPath	D:\ICPMH\1\DATA\6-18-14C.B	AcqDate	6/18/2014 14:32
Type	Sample	VialNumber	2103
Dilution	1	Comment	
Operator	EScarbrough	ISTDRefDataFileName	002CALB.D
SamplePassFail	Pass	ISTD PassFail	Pass

QC Analyte Table

Element	m/z	ISTD	Tune Step	Meas Value	FinalConcentration	Units	High Value	QC Flag
(Cd)	106	115	2	307.25	307.25	ppb	450	
(Cd)	108	115	2	308.75	308.75	ppb	450	
Cd	111	115	2	313.47	313.47	ppb	450	
(Cd)	114	115	2	310.05	310.05	ppb	450	

QC ISTD Table

Element	m/z	Tune Step	CPS	%RSD	Reference CPS	%Recovery	Lower Limit	Upper Limit	QC Flag
Sc	45	1	161574	0.35	158676	101.8	60	125	
Sc	45	2	4464395	3.88	4275233	104.4	60	125	
Y	89	1	912249	0.15	894674	102.0	60	125	
Y	89	2	6793155	3.87	6551865	103.7	60	125	
In	115	1	1137980	0.35	1118000	101.8	60	125	
In	115	2	6210799	3.76	6059092	102.5	60	125	
Tb	159	2	7395263	4.15	7343529	100.7	60	125	
Ho	165	2	6981298	4.61	6896126	101.2	60	125	
Bi	209	1	2269776	1.27	2263102	100.3	60	125	
Bi	209	2	4210755	3.95	4191215	100.5	60	125	

TuneStep	TuneFile
1	he.u
2	nogas.u

Sample Report

Sample Name aa62003 1:10
DataPath D:\ICPMH\1\DATA\6-18-14C.B
Type Sample
Dilution 1
Operator EScarbrough
SamplePassFail Pass

Data File Name 009SMPL.D
AcqDate 6/18/2014 14:38
VialNumber 2104
Comment
ISTDRefDataFileName 002CALB.D
ISTD PassFail Pass

QC Analyte Table

Element	m/z	ISTD	Tune Step	Meas Value	FinalConcentration	Units	High Value	QC Flag
(Cd)	106	115	2	392.85	392.85	ppb	450	
(Cd)	108	115	2	396.18	396.18	ppb	450	
Cd	111	115	2	398.93	398.93	ppb	450	
(Cd)	114	115	2	397.63	397.63	ppb	450	

QC ISTD Table

Element	m/z	Tune Step	CPS	%RSD	Reference CPS	%Recovery	Lower Limit	Upper Limit	QC Flag
Sc	45	1	162880	2.40	158676	102.6	60	125	
Sc	45	2	4465536	0.20	4275233	104.5	60	125	
Y	89	1	915126	3.28	894674	102.3	60	125	
Y	89	2	6815282	0.53	6551865	104.0	60	125	
In	115	1	1138863	3.18	1118000	101.9	60	125	
In	115	2	6252724	0.37	6059092	103.2	60	125	
Tb	159	2	7547593	1.02	7343529	102.8	60	125	
Ho	165	2	7067032	0.87	6896126	102.5	60	125	
Bi	209	1	2221578	3.18	2263102	98.2	60	125	
Bi	209	2	4243584	0.53	4191215	101.2	60	125	

TuneStep	TuneFile
1	he.u
2	nogas.u

Sample Report

Sample Name aa62013 1:10
DataPath D:\ICPMH\1\DATA\6-18-14C.B
Type Sample
Dilution 1
Operator EScarbrough
SamplePassFail Pass

Data File Name 010SMPL.D
AcqDate 6/18/2014 14:45
VialNumber 2105
Comment
ISTDRefDataFileName 002CALB.D
ISTD PassFail Pass

QC Analyte Table

Element	m/z	ISTD	Tune Step	Meas Value	FinalConcentration	Units	High Value	QC Flag
(Cd)	106	115	2	310.20	310.20	ppb	450	
(Cd)	108	115	2	310.16	310.16	ppb	450	
Cd	111	115	2	315.16	315.16	ppb	450	
(Cd)	114	115	2	313.87	313.87	ppb	450	

QC ISTD Table

Element	m/z	Tune Step	CPS	%RSD	Reference CPS	%Recovery	Lower Limit	Upper Limit	QC Flag
Sc	45	1	162556	0.81	158676	102.4	60	125	
Sc	45	2	4455956	0.32	4275233	104.2	60	125	
Y	89	1	918006	0.68	894674	102.6	60	125	
Y	89	2	6705457	0.30	6551865	102.3	60	125	
In	115	1	1142208	0.46	1118000	102.2	60	125	
In	115	2	6173508	0.27	6059092	101.9	60	125	
Tb	159	2	7364861	0.47	7343529	100.3	60	125	
Ho	165	2	6877987	0.09	6896126	99.7	60	125	
Bi	209	1	2244339	1.14	2263102	99.2	60	125	
Bi	209	2	4155532	0.23	4191215	99.1	60	125	

TuneStep	TuneFile
1	he.u
2	nogas.u

Sample Report

Sample Name aa62144 1:10
DataPath D:\ICPMH\1\DATA\6-18-14C.B
Type Sample
Dilution 1
Operator EScarbrough
SamplePassFail Pass

Data File Name 011SMPL.D
AcqDate 6/18/2014 14:52
VialNumber 2106
Comment
ISTDRefDataFileName 002CALB.D
ISTD PassFail Pass

QC Analyte Table

Element	m/z	ISTD	Tune Step	Meas Value	FinalConcentration	Units	High Value	QC Flag
(Cd)	106	115	2	277.70	277.70	ppb	450	
(Cd)	108	115	2	280.12	280.12	ppb	450	
Cd	111	115	2	285.79	285.79	ppb	450	
(Cd)	114	115	2	280.92	280.92	ppb	450	

QC ISTD Table

Element	m/z	Tune Step	CPS	%RSD	Reference CPS	%Recovery	Lower Limit	Upper Limit	QC Flag
Sc	45	1	160478	1.13	158676	101.1	60	125	
Sc	45	2	4464936	0.59	4275233	104.4	60	125	
Y	89	1	918665	0.25	894674	102.7	60	125	
Y	89	2	6822599	0.39	6551865	104.1	60	125	
In	115	1	1139166	0.63	1118000	101.9	60	125	
In	115	2	6233582	0.70	6059092	102.9	60	125	
Tb	159	2	7436264	0.60	7343529	101.3	60	125	
Ho	165	2	6981760	1.15	6896126	101.2	60	125	
Bi	209	1	2256681	0.66	2263102	99.7	60	125	
Bi	209	2	4242115	0.21	4191215	101.2	60	125	

TuneStep	TuneFile
1	he.u
2	nogas.u

Sample Report

Sample Name aa62145 1:10	Data File Name 012SMPL.D
DataPath D:\ICPMH\1\DATA\6-18-14C.B	AcqDate 6/18/2014 14:59
Type Sample	VialNumber 2107
Dilution 1	Comment
Operator EScarbrough	ISTDRefDataFileName 002CALB.D
SamplePassFail Pass	ISTD PassFail Pass

QC Analyte Table

Element	m/z	ISTD	Tune Step	Meas Value	FinalConcentration	Units	High Value	QC Flag
(Cd)	106	115	2	334.24	334.24	ppb	450	
(Cd)	108	115	2	337.43	337.43	ppb	450	
Cd	111	115	2	338.26	338.26	ppb	450	
(Cd)	114	115	2	337.01	337.01	ppb	450	

QC ISTD Table

Element	m/z	Tune Step	CPS	%RSD	Reference CPS	%Recovery	Lower Limit	Upper Limit	QC Flag
Sc	45	1	160108	0.15	158676	100.9	60	125	
Sc	45	2	4375285	2.18	4275233	102.3	60	125	
Y	89	1	911717	0.73	894674	101.9	60	125	
Y	89	2	6727534	1.31	6551865	102.7	60	125	
In	115	1	1131824	0.41	1118000	101.2	60	125	
In	115	2	6187669	1.69	6059092	102.1	60	125	
Tb	159	2	7402087	1.94	7343529	100.8	60	125	
Ho	165	2	7001053	2.13	6896126	101.5	60	125	
Bi	209	1	2247919	0.54	2263102	99.3	60	125	
Bi	209	2	4209909	2.11	4191215	100.4	60	125	

TuneStep	TuneFile
1	he.u
2	nogas.u

Sample Report

Sample Name aa62152 1:10
DataPath D:\ICPMH\1\DATA\6-18-14C.B
Type Sample
Dilution 1
Operator EScarborough
SamplePassFail Pass

Data File Name 013SMPL.D
AcqDate 6/18/2014 15:06
VialNumber 2108
Comment
ISTDRefDataFileName 002CALB.D
ISTD PassFail Pass

QC Analyte Table

Element	m/z	ISTD	Tune Step	Meas Value	FinalConcentration	Units	High Value	QC Flag
(Cd)	106	115	2	335.53	335.53	ppb	450	
(Cd)	108	115	2	335.22	335.22	ppb	450	
Cd	111	115	2	340.81	340.81	ppb	450	
(Cd)	114	115	2	336.38	336.38	ppb	450	

QC ISTD Table

Element	m/z	Tune Step	CPS	%RSD	Reference CPS	%Recovery	Lower Limit	Upper Limit	QC Flag
Sc	45	1	163796	4.93	158676	103.2	60	125	
Sc	45	2	4486549	0.51	4275233	104.9	60	125	
Y	89	1	930211	5.03	894674	104.0	60	125	
Y	89	2	6892209	1.06	6551865	105.2	60	125	
In	115	1	1161605	5.43	1118000	103.9	60	125	
In	115	2	6296858	1.67	6059092	103.9	60	125	
Tb	159	2	7535939	1.49	7343529	102.6	60	125	
Ho	165	2	7093496	0.97	6896126	102.9	60	125	
Bi	209	1	2289258	5.22	2263102	101.2	60	125	
Bi	209	2	4309259	0.49	4191215	102.8	60	125	

TuneStep	TuneFile
1	he.u
2	nogas.u

Sample Report

Sample Name	aa62157 1:10	Data File Name	014SMPL.D
DataPath	D:\ICPMH\1\DATA\6-18-14C.B	AcqDate	6/18/2014 15:12
Type	Sample	VialNumber	2109
Dilution	1	Comment	
Operator	EScarbrough	ISTDRefDataFileName	002CALB.D
SamplePassFail	Pass	ISTD PassFail	Pass

QC Analyte Table

Element	m/z	ISTD	Tune Step	Meas Value	FinalConcentration	Units	High Value	QC Flag
(Cd)	106	115	2	439.15	439.15	ppb	450	
(Cd)	108	115	2	441.24	441.24	ppb	450	
(Cd)	111	115	2	444.41	444.41	ppb	450	
(Cd)	114	115	2	443.88	443.88	ppb	450	

QC ISTD Table

Element	m/z	Tune Step	CPS	%RSD	Reference CPS	%Recovery	Lower Limit	Upper Limit	QC Flag
Sc	45	1	161539	1.04	158676	101.8	60	125	
Sc	45	2	4501957	0.39	4275233	105.3	60	125	
Y	89	1	918209	0.18	894674	102.6	60	125	
Y	89	2	6852520	0.37	6551865	104.6	60	125	
In	115	1	1149246	0.47	1118000	102.8	60	125	
In	115	2	6329024	0.58	6059092	104.5	60	125	
Tb	159	2	7566756	0.24	7343529	103.0	60	125	
Ho	165	2	7126071	0.49	6896126	103.3	60	125	
Bi	209	1	2249358	0.81	2263102	99.4	60	125	
Bi	209	2	4311014	0.23	4191215	102.9	60	125	

TuneStep	TuneFile
1	he.u
2	nogas.u

Sample Report

Sample Name aa62158 1:10
DataPath D:\ICPMH\1\DATA\6-18-14C.B
Type Sample
Dilution 1
Operator EScarbrough
SamplePassFail Pass

Data File Name 015SMPL.D
AcqDate 6/18/2014 15:19
VialNumber 2110
Comment
ISTDRefDataFileName 002CALB.D
ISTD PassFail Pass

QC Analyte Table

Element	m/z	ISTD	Tune Step	Meas Value	FinalConcentration	Units	High Value	QC Flag
(Cd)	106	115	2	291.80	291.80	ppb	450	
(Cd)	108	115	2	292.91	292.91	ppb	450	
Cd	111	115	2	296.47	296.47	ppb	450	
(Cd)	114	115	2	294.33	294.33	ppb	450	

QC ISTD Table

Element	m/z	Tune Step	CPS	%RSD	Reference CPS	%Recovery	Lower Limit	Upper Limit	QC Flag
Sc	45	1	160286	1.27	158676	101.0	60	125	
Sc	45	2	4506545	0.90	4275233	105.4	60	125	
Y	89	1	914723	1.13	894674	102.2	60	125	
Y	89	2	6820963	1.08	6551865	104.1	60	125	
In	115	1	1148927	1.04	1118000	102.8	60	125	
In	115	2	6318888	0.34	6059092	104.3	60	125	
Tb	159	2	7623271	0.52	7343529	103.8	60	125	
Ho	165	2	7165129	1.09	6896126	103.9	60	125	
Bi	209	1	2286330	0.65	2263102	101.0	60	125	
Bi	209	2	4330343	0.72	4191215	103.3	60	125	

TuneStep	TuneFile
1	he.u
2	nogas.u

Sample Report

Sample Name	rinse	Data File Name	016SMPL.D
DataPath	D:\ICPMH\1\DATA\6-18-14C.B	AcqDate	6/18/2014 15:26
Type	Sample	VialNumber	1303
Dilution	1	Comment	
Operator	EScarbrough	ISTDRefDataFileName	002CALB.D
SamplePassFail	Pass	ISTD PassFail	Pass

QC Analyte Table

Element	m/z	ISTD	Tune Step	Meas Value	FinalConcentration	Units	High Value	QC Flag
(Cd)	106	115	2	-0.42	-0.42	ppb	450	
(Cd)	108	115	2	-0.03	-0.03	ppb	450	
Cd	111	115	2	-0.02	-0.02	ppb	450	
(Cd)	114	115	2	-0.02	-0.02	ppb	450	

QC ISTD Table

Element	m/z	Tune Step	CPS	%RSD	Reference CPS	%Recovery	Lower Limit	Upper Limit	QC Flag
Sc	45	1	166609	0.78	158676	105.0	60	125	
Sc	45	2	4515762	0.34	4275233	105.6	60	125	
Y	89	1	950189	0.34	894674	106.2	60	125	
Y	89	2	6750571	0.27	6551865	103.0	60	125	
In	115	1	1202108	1.12	1118000	107.5	60	125	
In	115	2	6295479	0.39	6059092	103.9	60	125	
Tb	159	2	7483334	0.85	7343529	101.9	60	125	
Ho	165	2	7048196	1.38	6896126	102.2	60	125	
Bi	209	1	2372607	1.53	2263102	104.8	60	125	
Bi	209	2	4381212	0.60	4191215	104.5	60	125	

TuneStep	TuneFile
1	he.u
2	nogas.u

Continuing Calibration Blank (CCB) - US EPA Method 200.8

Sample Name CCB
DataPath D:\ICPMH\1\DATA\6-18-14C.B
Type 2-CCB
Dilution 1
Operator EScarbrough
SamplePassFail Pass

Data File Name 017SMPL.D
Acq Date Time 2014-06-18T15:33:08-05:00
VialNumber 1101
Comment
ISTDRefDataFileName 002CALB.D
ISTD PassFail Pass

QC Analyte Table

Element	m/z	ISTD	Tune Step	Meas Value	Units	QC High	QC Flag
(Cd)	106	115	2	-0.39	ppb	1.1	
(Cd)	108	115	2	0.03	ppb	1.1	
Cd	111	115	2	-0.01	ppb	1.1	
(Cd)	114	115	2	-0.01	ppb	1.1	

QC ISTD Table

Element	m/z	Tune Step	CPS	%RSD	Reference CPS	%Recovery	Lower Limit	Upper Limit	QC Flag
Sc	45	1	157402	2.71	158676	99.2	60	125	
Sc	45	2	4408466	0.79	4275233	103.1	60	125	
Y	89	1	918507	3.50	894674	102.7	60	125	
Y	89	2	6721623	0.65	6551865	102.6	60	125	
In	115	1	1163888	4.39	1118000	104.1	60	125	
In	115	2	6334147	0.28	6059092	104.5	60	125	
Tb	159	2	7807096	0.63	7343529	106.3	60	125	
Ho	165	2	7302510	0.36	6896126	105.9	60	125	
Bi	209	1	2381808	2.20	2263102	105.2	60	125	
Bi	209	2	4546807	0.56	4191215	108.5	60	125	

TuneStep	TuneFile
1	he.u
2	nogas.u

Sample Report

Sample Name 0.5 PPB (LLCV)
DataPath D:\ICPMH\1\DATA\6-18-14C.B
Type Sample
Dilution 1
Operator EScarbrough
SamplePassFail Pass

Data File Name 018SMPL.D
AcqData 6/18/2014 15:39
VialNumber 1102
Comment
ISTDRefDataFileName 002CALB.D
ISTD PassFail Pass

QC Analyte Table

Element	m/z	ISTD	Tune Step	Meas Value	FinalConcentration	Units	High Value	QC Flag
(Cd)	106	115	2	-0.18	-0.18	ppb	450	
(Cd)	108	115	2	0.46	0.46	ppb	450	
Cd	111	115	2	0.46	0.46	ppb	450	
(Cd)	114	115	2	0.46	0.46	ppb	450	

QC ISTD Table

Element	m/z	Tune Step	CPS	%RSD	Reference CPS	%Recovery	Lower Limit	Upper Limit	QC Flag
Sc	45	1	156429	0.06	158676	98.6	60	125	
Sc	45	2	4411271	1.26	4275233	103.2	60	125	
Y	89	1	915093	0.90	894674	102.3	60	125	
Y	89	2	6812074	0.40	6551865	104.0	60	125	
In	115	1	1158385	1.42	1118000	103.6	60	125	
In	115	2	6373699	0.59	6059092	105.2	60	125	
Tb	159	2	7804565	0.12	7343529	106.3	60	125	
Ho	165	2	7376881	1.17	6896126	107.0	60	125	
Bi	209	1	2369178	1.74	2263102	104.7	60	125	
Bi	209	2	4531621	0.42	4191215	108.1	60	125	

TuneStep	TuneFile
1	he.u
2	nogas.u

Continuing Calibration Verification (CCV) - US EPA Method 200.8

Sample Name CCV
DataPathName D:\ICPMH\1\DATA\6-18-14C.B
Type 2-CCV
Dilution 1
Operator EScarbrough
SamplePassFail Pass

Data File Name 019SMPL.D
AcqDate 6/18/2014 15:46
VialNumber 1105
Comment
ISTD Ref File 002CALB.D
ISTD PassFail Pass

QC Analyte Table

Element	m/z	ISTD	TuneStep	Meas Value	Units	ExpValue	%Rec	QC1 Low	QC1 High	QC2 Low	QC2 High	QC Flag
(Cd)	106	115	2	99.86	ppb	100	99.9	85	115	90	110	
(Cd)	108	115	2	99.66	ppb	100	99.7	85	115	90	110	
Cd	111	115	2	98.22	ppb	100	98.2	85	115	90	110	
(Cd)	114	115	2	101.75	ppb	100	101.8	85	115	90	110	

QC ISTD Table

Element	m/z	Tune Step	CPS	%RSD	Reference CPS	%Rec	Lower Limit	Upper Limit	QC Flag
Sc	45	1	156654	0.58	158676	98.7	60	125	
Sc	45	2	4347426	0.62	4275233	101.7	60	125	
Y	89	1	908092	0.64	894674	101.5	60	125	
Y	89	2	6744758	1.15	6551865	102.9	60	125	
In	115	1	1140952	0.24	1118000	102.1	60	125	
In	115	2	6289286	0.27	6059092	103.8	60	125	
Tb	159	2	7698720	0.56	7343529	104.8	60	125	
Ho	165	2	7251933	1.04	6896126	105.2	60	125	
Bi	209	1	2324057	1.34	2263102	102.7	60	125	
Bi	209	2	4398646	1.20	4191215	104.9	60	125	

TuneStep	TuneFile
1	he.u
2	nogas.u

Continuing Calibration Verification (CCV) - US EPA Method 200.8

Sample Name SCP Science (100)
DataPathName D:\ICPMH\1\DATA\6-18-14C.B
Type 2-CCV
Dilution 1
Operator EScarbrough
SamplePassFail Pass

Data File Name 020SMPL.D
AcqDate 6/18/2014 15:53
VialNumber 1301
Comment
ISTD Ref File 002CALB.D
ISTD PassFail Pass

QC Analyte Table

Element	m/z	ISTD	TuneStep	Meas Value	Units	ExpValue	%Rec	QC1 Low	QC1 High	QC2 Low	QC2 High	QC Flag
(Cd)	106	115	2	97.71	ppb	100	97.7	85	115	90	110	
(Cd)	108	115	2	97.66	ppb	100	97.7	85	115	90	110	
Cd	111	115	2	96.35	ppb	100	96.4	85	115	90	110	
(Cd)	114	115	2	100.32	ppb	100	100.3	85	115	90	110	

QC ISTD Table

Element	m/z	Tune Step	CPS	%RSD	Reference CPS	%Rec	Lower Limit	Upper Limit	QC Flag
Sc	45	1	156486	0.48	158676	98.6	60	125	
Sc	45	2	4386670	1.33	4275233	102.6	60	125	
Y	89	1	904757	0.67	894674	101.1	60	125	
Y	89	2	6762030	0.73	6551865	103.2	60	125	
In	115	1	1147411	1.66	1118000	102.6	60	125	
In	115	2	6338813	0.83	6059092	104.6	60	125	
Tb	159	2	7818381	1.15	7343529	106.5	60	125	
Ho	165	2	7294337	1.37	6896126	105.8	60	125	
Bi	209	1	2350757	0.41	2263102	103.9	60	125	
Bi	209	2	4538101	0.82	4191215	108.3	60	125	

TuneStep	TuneFile
1	he.u
2	nogas.u

TCLP

Instrument Comparison

Purpose: Rule out Instrumentation as source of data discrepancies

Actions: MDEQ Lab split ten sample extracts (20 ml each) between Mississippi State Chem Lab (MSCL) and Micro-Methods for Chromium, Cadmium, and Lead analysis (EPA Method 200.7).

Reasoning: These sample extracts were previously prepared and analyzed by MDEQ Lab. By sending sample extracts, we were able to isolate instrumentation as the only variable between laboratories.

Summary: Based on results, we are able to conclude that significant data discrepancies are not likely to be caused by different instrumentation. Further investigation into Sample Matrix/Sample Collection variations would be advised.

Table 1. Three Lab Comparisons of Cadmium Results

Sample ID	Bench #	MDEQ Cd (ppm)	MSCL Cd (ppm)	Micro-Methods Cd (ppm)
H-SW-11	62146	2.26	2.4	2.13
H-SW-08	62150	2.10	2.2	1.77
H-SW-09	62151	2.42	2.3	1.90
C9DEQ	62152	3.45	3.3	2.67
A7DEQ	62153	1.59	1.6	1.36
HS-W-04	62154	2.40	2.3	1.90
HS-W-05	62155	2.50	2.4	2.15
H-W-06	62156	3.65	3.4	3.19
D10DEQ	62157	4.09	4.3	3.53
E5DEQ	62158	2.73	2.8	2.32



CHAIN OF CUSTODY RECORD
Mississippi Department of Environmental Quality
Office of Pollution Control Laboratory
1542 Old Whitfield Road
Pearl, MS 39208
Phone (601) 961-5701 Fax (601) 961-5704

need before
7/4/14



Project: <u>TCLP Comparison</u>				Ship To: <input type="checkbox"/> Pearl Laboratory			
Location: NRO / CRO / SRO / Other <u>LAB</u> (Circle one)				<input checked="" type="checkbox"/> OTHER <u>Micro-Methods</u>			
Sample Matrix: 1. Surface water 5. Sediment 9. Potable water 2. Ground water 6. Soil 10. Sludge 3. Wastewater 7. Fish tissue 11. Unsorted Benthic sample 4. Filtered chlorophyll-a 8. Leachate 12. Other <u>TCLP Extract</u>				Samplers (Sign) A. <u>Erica Scarbrough</u> C. _____ B. _____ D. _____			

enSPIRE # / Site # (Print N/A if neither is known)	Date 20 <u>14</u>	Time (24 hr) <u>1350</u>	Sample matrix	Station Location/Description	Total # of Containers	Preservative							Lab Use Only:
						HCl	NaOH	HNO ₃	H ₂ SO ₄	Na ₂ S ₂ O ₅	None		
62146	6/26	1350	12	EPA 200.7 (Cr, Cd, Pb)	1			X					
62150	6/26	1350	12	"	1			X					
62151	6/26	1350	12	"	1			X					
62152	6/26	1350	12	"	1			X					
62153	6/26	1350	12	"	1			X					
62154	6/26	1350	12	"	1			X					
62155	6/26	1350	12	"	1			X					
62156	6/26	1350	12	"	1			X					
62157	6/26	1350	12	"	1			X					
62158	6/26	1350	12	"	1			X					

COPY

Relinquished By: (print) <u>[Signature]</u>		Date/Time: <u>11:20 am</u>		Received By: (print) <u>[Signature]</u>		Date/Time: _____	
(sign) <u>[Signature]</u>		<u>6/27/14</u>		(sign) <u>[Signature]</u>		_____	
Relinquished By: (print) _____		Date/Time: _____		Received By: (print) _____		Date/Time: _____	
(sign) _____		_____		(sign) _____		_____	

Notice: Must use a separate form for each ice chest.

Copy DISTRIBUTION: Original-Project Manager, Copy 1-QA Manager, Copy 2-Collector/Sampler

Page

1 of 1

Transport container: Ice _____ Dry Ice _____ None X

Final destination ice chest temp (°C)

Ver.022614



6500 Sunplex Drive
Ocean Springs, MS 39564
228.875.6420 Phone
228.875.6423 Fax

July 03, 2014

David Singleton

Work Order # : 1406532

MS Department of Environmental Quality
1542 Old Whitfield Road
Pearl, MS 39208
RE: TCLP Comparison

Purchase Order #:

Enclosed are Micro-Methods Laboratory, Inc. results of analyses performed on samples received 06/27/14 11:20. If you have any questions concerning this report, please feel free to contact the office.

Sincerely,

Harry P. Howell

President
Micro-Methods Laboratory, Inc.

DISCLAIMER

The results only relate to the items or the sample and/or samples received by the laboratory. This report shall not be reproduced except in full, without the approval of the laboratory. All test methods performed meet the requirements of NELAP 2009 Standards. Any variances and/or deviations specific to this analytical report are referenced in the lab report using qualifiers and detailed explanations found in the case narrative.



6500 Sunplex Drive
Ocean Springs, MS 39564
228-875-6420 Phone
228-875-6423 Fax

MS Department of Environmental Quality
1542 Old Whitfield Road
Pearl, MS, 39208

Project: TCLP Comparison
Project Number: [none]
Project Manager: David Singleton

Reported:
07/03/14 10:45

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date/Time Sampled	Sampled by	Date/Time Received
62146	1406532-01	Liquid	06/26/14 13:50	MSDEQ	06/27/14 11:20
62150	1406532-02	Liquid	06/26/14 13:50	MSDEQ	06/27/14 11:20
62151	1406532-03	Liquid	06/26/14 13:50	MSDEQ	06/27/14 11:20
62152	1406532-04	Liquid	06/26/14 13:50	MSDEQ	06/27/14 11:20
62153	1406532-05	Liquid	06/26/14 13:50	MSDEQ	06/27/14 11:20
62154	1406532-06	Liquid	06/26/14 13:50	MSDEQ	06/27/14 11:20
62155	1406532-07	Liquid	06/26/14 13:50	MSDEQ	06/27/14 11:20
62156	1406532-08	Liquid	06/26/14 13:50	MSDEQ	06/27/14 11:20
62157	1406532-09	Liquid	06/26/14 13:50	MSDEQ	06/27/14 11:20
62158	1406532-10	Liquid	06/26/14 13:50	MSDEQ	06/27/14 11:20

Sample Receipt Conditions

Date/Time Received: 6/27/2014 11:20:00AM

Received by: Sarah E. Tomek

Date/Time Logged: 6/27/2014 12:19:00PM

Cooler ID: client cooler

Shipped by: Client Delivery

Submitted by: Robbie Patterson

Logged by: Sarah E. Tomek

Receipt Temperature: 21.7 °C

Custody Seals	No
Containers Intact	Yes
COC/Labels Agree	Yes
Labels Complete	No
COC Complete	Yes

Received on Ice	No
No Ice, Short Trip	No
Obvious Contamination	No
Rush to meet HT	No



6500 Sunplex Drive
Ocean Springs, MS 39564
228-875-6420 Phone
228-875-6423 Fax

MS Department of Environmental Quality
1542 Old Whitfield Road
Pearl MS, 39208

Project: TCLP Comparison
Project Number: [none]
Project Manager: David Singleton

Reported:
07/03/14 10:45

CASE NARRATIVE SUMMARY

All reported results are within Micro-Methods Laboratory, Inc. defined laboratory quality control objectives unless detailed in narrative summary or identified as qualifications. NOTE: All results listed on this report are calculated on a wet weight basis (as received by the laboratory) unless otherwise noted in the analysis qualification sections.

Summary Comments:

Metals Analyst Comments-SCH:

Client sent digestates for analysis. No additional preparation necessary. No QC samples included.

Qualification: *No Data Qualification*

Analyte & Samples(s) Qualified: *None*



6500 Sunplex Drive
Ocean Springs, MS 39564
228-875-6420 Phone
228-875-6423 Fax

MS Department of Environmental Quality
1542 Old Whitfield Road
Pearl MS, 39208

Project: TCLP Comparison
Project Number: [none]
Project Manager: David Singleton

Reported:
07/03/14 10:45

62146

1406532-01 (Liquid)

Analyte	Result	MRL	Units	Dil	Batch	Analyst	Date Time Prepared	Date Time Analyzed	Method	Notes
Metals										
Cadmium	2.13	0.010	mg/kg	1	4G02040	SCH	07/02/14 09:00	07/02/14 13:25	SW 6010B	
Chromium	0.189	0.010	"	"	"	SCH	"	"	"	
Lead	ND	0.050	"	"	"	SCH	"	"	"	



6500 Sunplex Drive
Ocean Springs, MS 39564
228-875-6420 Phone
228-875-6423 Fax

MS Department of Environmental Quality
1542 Old Whitfield Road
Pearl MS, 39208

Project: TCLP Comparison
Project Number: [none]
Project Manager: David Singleton

Reported:
07/03/14 10:45

62150

1406532-02 (Liquid)

Analyte	Result	MRL	Units	Dil	Batch	Analyst	Date Time Prepared	Date Time Analyzed	Method	Notes
Metals										
Cadmium	1.77	0.010	mg/kg	1	4G02040	SCH	07/02/14 09:00	07/02/14 13:30	SW 6010B	
Chromium	0.153	0.010	"	"	"	SCH	"	"	"	
Lead	ND	0.050	"	"	"	SCH	"	"	"	



6500 Sunplex Drive
Ocean Springs, MS 39564
228-875-6420 Phone
228-875-6423 Fax

MS Department of Environmental Quality
1542 Old Whitfield Road
Pearl MS, 39208

Project: TCLP Comparison
Project Number: [none]
Project Manager: David Singleton

Reported:
07/03/14 10:45

62151

1406532-03 (Liquid)

Analyte	Result	MRL	Units	Dil	Batch	Analyst	Date Time Prepared	Date Time Analyzed	Method	Notes
Metals										
Cadmium	1.90	0.010	mg/kg	1	4G02040	SCH	07/02/14 09:00	07/02/14 13:36	SW 6010B	
Chromium	0.163	0.010	"	"	"	SCH	"	"	"	
Lead	ND.	0.050	"	"	"	SCH	"	"	"	



6500 Sunplex Drive
Ocean Springs, MS 39564
228-875-6420 Phone
228-875-6423 Fax

MS Department of Environmental Quality
1542 Old Whitfield Road
Pearl MS, 39208

Project: TCLP Comparison
Project Number: [none]
Project Manager: David Singleton

Reported:
07/03/14 10:45

62152

1406532-04 (Liquid)

Analyte	Result	MRL	Units	Dil	Batch	Analyst	Date Time Prepared	Date Time Analyzed	Method	Notes
Metals										
Cadmium	2.67	0.010	mg/kg	1	4G02040	SCH	07/02/14 09:00	07/02/14 13:41	SW 6010B	
Chromium	0.275	0.010	"	"	"	SCH	"	"	"	
Lead	ND	0.050	"	"	"	SCH	"	"	"	



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Ocean Springs, MS 39564
228-875-6420 Phone
228-875-6423 Fax

MS Department of Environmental Quality
1542 Old Whitfield Road
Pearl MS, 39208

Project: TCLP Comparison
Project Number: [none]
Project Manager: David Singleton

Reported:
07/03/14 10:45

62153

1406532-05 (Liquid)

Analyte	Result	MRL	Units	Dil	Batch	Analyst	Date Time Prepared	Date Time Analyzed	Method	Notes
Metals										
Cadmium	1.36	0.010	mg/kg	1	4G02040	SCH	07/02/14 09:00	07/02/14 13:46	SW 6010B	
Chromium	0.111	0.010	"	"	"	SCH	"	"	"	
Lead	ND	0.050	"	"	"	SCH	"	"	"	



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MS Department of Environmental Quality
1542 Old Whitfield Road
Pearl MS, 39208

Project: TCLP Comparison
Project Number: [none]
Project Manager: David Singleton

Reported:
07/03/14 10:45

62154

1406532-06 (Liquid)

Analyte	Result	MRL	Units	Dil	Batch	Analyst	Date Time Prepared	Date Time Analyzed	Method	Notes
Metals										
Cadmium	1.90	0.010	mg/kg	1	4G02040	SCH	07/02/14 09:00	07/02/14 13:52	SW 6010B	
Chromium	0.185	0.010	"	"	"	SCH	"	"	"	
Lead	ND	0.050	"	"	"	SCH	"	"	"	



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228-875-6423 Fax

MS Department of Environmental Quality
1542 Old Whitfield Road
Pearl MS, 39208

Project: TCLP Comparison
Project Number: [none]
Project Manager: David Singleton

Reported:
07/03/14 10:45

62155

1406532-07 (Liquid)

Analyte	Result	MRL	Units	Dil	Batch	Analyst	Date Time Prepared	Date Time Analyzed	Method	Notes
Metals										
Cadmium	2.15	0.010	mg/kg	1	4G02040	SCH	07/02/14 09:00	07/02/14 13:57	SW 6010B	
Chromium	0.210	0.010	"	"	"	SCH	"	"	"	
Lead	ND	0.050	"	"	"	SCH	"	"	"	



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MS Department of Environmental Quality
1542 Old Whitfield Road
Pearl MS, 39208

Project: TCLP Comparison
Project Number: [none]
Project Manager: David Singleton

Reported:
07/03/14 10:45

62156

1406532-08 (Liquid)

Analyte	Result	MRL	Units	Dil	Batch	Analyst	Date Time Prepared	Date Time Analyzed	Method	Notes
Metals										
Cadmium	3.19	0.010	mg/kg	1	4G02040	SCH	07/02/14 09:00	07/02/14 14:02	SW 6010B	
Chromium	0.406	0.010	"	"	"	SCH	"	"	"	
Lead	ND	0.050	"	"	"	SCH	"	"	"	



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228-875-6423 Fax

MS Department of Environmental Quality
1542 Old Whitfield Road
Pearl MS, 39208

Project: TCLP Comparison
Project Number: [none]
Project Manager: David Singleton

Reported:
07/03/14 10:45

62157

1406532-09 (Liquid)

Analyte	Result	MRL	Units	Dil	Batch	Analyst	Date Time Prepared	Date Time Analyzed	Method	Notes
Metals										
Cadmium	3.53	0.010	mg/kg	1	4G02040	SCH	07/02/14 09:00	07/02/14 14:08	SW 6010B	
Chromium	0.249	0.010	"	"	"	SCH	"	"	"	
Lead	ND	0.050	"	"	"	SCH	"	"	"	



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MS Department of Environmental Quality
1542 Old Whitfield Road
Pearl MS, 39208

Project: TCLP Comparison
Project Number: [none]
Project Manager: David Singleton

Reported:
07/03/14 10:45

62158

1406532-10 (Liquid)

Analyte	Result	MRL	Units	Dil	Batch	Analyst	Date Time Prepared	Date Time Analyzed	Method	Notes
Metals										
Cadmium	2.32	0.010	mg/kg	1	4G02040	SCH	07/02/14 09:00	07/02/14 14:13	SW 6010B	
Chromium	0.190	0.010	"	"	"	SCH	"	"	"	
Lead	ND	0.050	"	"	"	SCH	"	"	"	



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1542 Old Whitfield Road
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Project: TCLP Comparison
Project Number: [none]
Project Manager: David Singleton

Reported:
07/03/14 10:45

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
---------	--------	-----	-------	----------------	------------------	------	----------------	-----	--------------	-------



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MS Department of Environmental Quality
1542 Old Whitfield Road
Pearl MS, 39208

Project: TCLP Comparison
Project Number: [none]
Project Manager: David Singleton

Reported:
07/03/14 10:45

Laboratory Accreditations/Certifications

Code	Description	Number	Expires
C01	La Environmental Lab Accreditation Program	01960	06/30/2014
C02	National Environmental Lab Accreditation Program	TNI01397	06/30/2014
C03	Ms Dept of Health (Coliform)	MS00021	12/31/2014
C04	Ms Dept of Health (Drinking Water Certificate)	MS00021	12/31/2014
C05	Ms DEQ Lead Firm Certification	PBF-00000028	10/15/2014
C06	MsDEQ Asbestos Inspector : C.D. Bingham	ABI-00001348	03/14/2015
C07	MsDEQ Air Monitor : C.D. Bingham	AM-011572	03/13/2015
C08	MsDEQ Asbestos Inspector: C. W. Meins	ABI-00001821	10/03/2014
C09	MsDEQ Air Monitor : C.W. Meins	AM-011189	03/13/2015
C12	MsDEQ Asbestos Inspector : H.P. Howell	ABI-00001345	03/14/2015
C14	MsDEQ Lead Paint Inspector : C.D. Bingham	PBI-00003690	04/20/2015
C15	MsDEQ Lead Paint Inspector : C.W. Meins	PBI-00001740	04/20/2015

Report Definitions

DET	Analyte DETECTED
ND	Analyte NOT DETECTED at or above the minimum reporting limit
NR	Not Reported
RPD	Relative Percent Difference
ICV	Initial Calibration Verification
CCV	Continuing Calibration Verification Standard
SSV	Secondary Source Verification Standard
LCS	Lab Control Spike - Lab matrix prepared with known concentration of analyte/s of interest analyzed by method.
MS	Matrix Spike - Sample prepared with known concentration of analyte/s of interest analyzed by method.
MSD	Matrix Spike Duplicate - Duplicate sample prepared with known concentration of analyte/s of interest analyzed by method.
MRL	Minimum Reporting Limit
%REC	Percentage Recovery of known concentration added to matrix
Batch	Group of samples prepared for analysis not to exceed 20 samples.
Matrix	Material containing analyte/s of interest
Surrogate	Analyte added to sample to determine extraction efficiency of method.



1406532

CHAIN OF CUSTODY RECORD

Mississippi Department of Environmental Quality
Office of Pollution Control Laboratory
1542 Old Whitfield Road
Pearl, MS 39208

Phone (601) 961-5701 Fax (601) 961-5704

need before
7/4/14

Project: <u>TCLP Comparison</u>				Ship To: <input type="checkbox"/> Pearl Laboratory								
Location: NRO / CRO / SRO / Other <u>LAB</u> (Circle one)				<input checked="" type="checkbox"/> OTHER <u>Micro-Methods</u>								
Sample Matrix: 1. Surface water 5. Sediment 9. Potable water 2. Ground water 6. Soil 10. Sludge 3. Wastewater 7. Fish tissue 11. Unsorted Benthic sample 4. Filtered chlorophyll-a 8. Leachate 12. Other <u>TCLP Extract</u>				Samplers (Sign) A. <u>Erica Scarborough</u> C. _____ B. _____ D. _____								
enSPIRE # / Site # (Print N/A if neither is known)	Date 20 <u>14</u>	Time (24 hr)	Sample matrix	Station Location/Description	Total # of Containers	Preservative						Lab Use Only:
						HCl	NaOH	HNO ₃	H ₂ SO ₄	Na ₂ S ₂ O ₇	None	
62146	6/26	1350	12	EA 200.7 (Cr, Cd, Pb)	1			X				
62150	6/26	1350	12	"	1			X				
62151	6/26	1350	12	"	1			X				
62152	6/26	1350	12	"	1			X				
62153	6/26	1350	12	"	1			X				
62154	6/26	1350	12	"	1			X				
62155	6/26	1350	12	"	1			X				
62156	6/26	1350	12	"	1			X				
62157	6/26	1350	12	"	1			X				
62158	6/26	1350	12	"	1			X				
Relinquished By:		Date/Time	Received By:		Date/Time	Received By:						
(print) <u>Robert Patterson</u>		11:20 am	(print) <u>Sarah Tomek</u>			(print)						
(sign) <u>Robert Patterson</u>		6/27/14	(sign) <u>Sarah Tomek</u>			(sign)						
Relinquished By:		Date/Time	Received By:		Date/Time	Received By:						
(print)			(print)			(print)						
(sign)			(sign)			(sign)						

Notice: Must use a separate form for each ice chest.

Copy DISTRIBUTION: Original-Project Manager, Copy 1-QA Manager, Copy 2-Collector/Sampler

Page

Transport container: Ice _____ Dry Ice _____ None X 21.7°C T#3 client cooler

1 of 1

Final destination ice chest temp (°C) _____

Ver.022614

Issue Date: 7/18/11	Micro-Methods Laboratory Log-In Checklist	DCN: F207
Implementation Date: 7/18/11		Date Revised: 7-18-11
		Revision: 4

Client MDEQ WO 1406532 Shipped By Client
 Date/Time Received 6/27/14 @ 1120 Unpacked/Checked By ST

Cooler ID	Ice Present Yes/No	Temperature	Thermometer ID	Custody Sealed Yes/No	Custody Seal Intact Yes/No
<u>Client</u>	<u>NO</u>	<u>21.7°C</u>	<u>T#3</u>	<u>NO</u>	<u>N/A</u>

If not iced, were samples received within one hour of collection? Yes ___ No ___ N/A X
 Temperature Blank Used Yes ___ No X If not, temperature taken from cooler ___ or bottle X
 Multi Cooler shipment: ID of samples in coolers that exceed 6°C _____

Custody Seals on Bottles Present Yes ___ No X
 Containers Intact Yes X No ___
 Proper Containers for Requested Analysis Yes X No ___

Correct Preservation Used for All Samples Yes X No ___
 Adequate Sample for Analysis Requested Yes X No ___

Volatile Vials Headspace Greater than 6mm in Diameter Yes ___ No ___ N/A X

Chain of Custody Form Included Yes X No ___
 Chain of Custody Form Complete Yes X No ___
 Chain of Custody Form Properly Relinquished Yes X No ___
 Field Sheets/Special Instructions Included Yes ___ No ___ N/A X
 Samples Missing on COC or From Cooler Yes ___ No X
 Sample Container Labels Match COC Yes X No ___

Samples Received Within Holding Time Yes X No ___
 Dept. Manager Notified of Rush/Short Holding Times Yes X No ___ N/A X

Does work order meet Micro Methods sample acceptance criteria Yes X No ___
 Note: Samples that do not meet acceptance criteria must be documented in the Sample Rejection Log.

Client Contacted _____ Contacted By _____ Date/Time _____

Client Instructions: Cancel Work Order _____
 Proceed with Work Order _____ (Data will be qualified)

Comments: _____

Controlled Document



CHAIN OF CUSTODY RECORD

Mississippi Department of Environmental Quality
Office of Pollution Control Laboratory
1542 Old Whitfield Road
Pearl, MS 39208
Phone (601) 961-5701 Fax (601) 961-5704



MISSISSIPPI DEPARTMENT OF
ENVIRONMENTAL QUALITY

Project: <u>TCLP Comparison</u>					Ship To: <input type="checkbox"/> Pearl Laboratory <u>MS State Chem Lab</u> <input checked="" type="checkbox"/> OTHER <u>Banner Analytical</u> (S)							
Location: <u>NRO / CRO / SRO / Other LAB</u> (Circle one)												
Sample Matrix: 1. Surface water 2. Ground water 3. Wastewater 4. Filtered chlorophyll-a 5. Sediment 6. Soil 7. Fish tissue 8. Leachate 9. Potable water 10. Sludge 11. Unsorted Benthic sample 12. Other <u>TCLP Extract</u>				Samplers (Sign) A. <u>Erica Scarbrough</u> C. _____ B. _____ D. _____								
enSPIRE # / Site # (Print N/A if neither is known)	Date 20 <u>14</u>	Time (24 hr)	Sample matrix	Station Location/Description	Total # of Containers	Preservative						Lab Use Only:
						HCl	NaOH	HNO ₃	H ₂ SO ₄	Na ₂ S ₂ O ₃	None	
62146	6/26	1350	12	EPA 200.8 (Cr, Cd, Pb)	1			X				
62150	6/26	1350	12	"	1			X				
62151	6/26	1350	12	"	1			X				
62152	6/26	1350	12	"	1			X				
62153	6/26	1350	12	"	1			X				
62154	6/26	1350	12	"	1			X				
62155	6/26	1350	12	"	1			X				
62156	6/26	1350	12	"	1			X				
62157	6/26	1350	12	"	1			X				
62158	6/26	1350	12	"	1			X				
Relinquished By: <u>William E. Smith</u> (print) (sign)		Date/Time <u>6/30/14</u> <u>11:45 AM</u>		Received By: <u>[Signature]</u> (print) (sign)		Relinquished By: (print) (sign)		Date/Time		Received By: (print) (sign)		
Relinquished By: (print) (sign)		Date/Time		Received By: (print) (sign)		Relinquished By: (print) (sign)		Date/Time		Received By: (print) (sign)		

Notice: Must use a separate form for each ice chest.

Copy DISTRIBUTION: Original-Project Manager, Copy 1-QA Manager, Copy 2-Collector/Sampler

Page

1 of 1

Transport container: Ice _____ Dry Ice _____ None X

Final destination ice chest temp (°C) _____

Ver.022614



Report of Analysis

Mississippi State Chemical Laboratory
PO Box CR
Mississippi State, Mississippi 39762

Dr. Ashli Brown
State Chemist

Phone 662-325-3428
Fax 662-325-7807
mscl.msstate.edu

For: MDEQ Office of Pollution Control
1542 Old Whitfield Road
Pearl MS 39208

Attn:

Report Date: 7/2/2014

Client Sample ID: 62146
PO#

Lab Sample ID: 140630012-001

Test	Sample Classification	Result	Unit	Comment
Cadmium	IAS Water	2.4	ppm	These results represent the values found in the aliquot only.
Chromium		0.26	ppm	
Lead		0.29	ppm	

Client Sample ID: 62150
PO#

Lab Sample ID: 140630012-002

Test	Sample Classification	Result	Unit	Comment
Cadmium	IAS Water	2.2	ppm	These results represent the values found in the aliquote only.
Chromium		0.24	ppm	
Lead		0.33	ppm	

Client Sample ID: 62151
PO#

Lab Sample ID: 140630012-003

Test	Sample Classification	Result	Unit	Comment
Cadmium	IAS Water	2.3	ppm	These results represent the values found in the aliquot only.
Chromium		0.24	ppm	
Lead		0.38	ppm	

AB
QA/QC Initial

Client Sample ID: 62152

Lab Sample ID: 140630012-004

PO#

Test	Sample Classification	Results	Units	Comment
Cadmium	IAS Water	3.3	ppm	These results represent the values found in the aliquote only.
Chromium		0.35	ppm	
Lead		0.19	ppm	

Client Sample ID: 62153

Lab Sample ID: 140630012-005

PO#

Test	Sample Classification	Results	Units	Comment
Cadmium	IAS Water	1.6	ppm	These results represent the values found in the aliquote only.
Chromium		0.20	ppm	
Lead		0.18	ppm	

Client Sample ID: 62154

Lab Sample ID: 140630012-006

PO#

Test	Sample Classification	Results	Units	Comment
Cadmium	IAS Water	2.3	ppm	These results represent the values found in the aliquote only.
Chromium		0.25	ppm	
Lead		0.10	ppm	

Client Sample ID: 62155

Lab Sample ID: 140630012-007

PO#

Test	Sample Classification	Results	Units	Comment
Cadmium	IAS Water	2.4	ppm	These results represent the values found in the aliquote only.
Chromium		0.29	ppm	
Lead		0.51	ppm	

Client Sample ID: 62156

Lab Sample ID: 140630012-008

PO#

Test	Sample Classification	Results	Units	Comment
Cadmium	IAS Water	3.4	ppm	These results represent the values found in the aliquote only.
Chromium		0.49	ppm	
Lead		0.29	ppm	


QA/QC Initial

Client Sample ID: 62157

Lab Sample ID:

140630012-009

PO#

Item	Sample Description	Result	Units	Comments
Cadmium	IAS Water	4.3	ppm	These results represent the values found in the aliquote only.
Chromium		0.35	ppm	
Lead		0.24	ppm	

Client Sample ID: 62158

Lab Sample ID:

140630012-010

PO#

Item	Sample Description	Result	Units	Comments
Cadmium	IAS Water	2.8	ppm	These results represent the values found in the aliquote only.
Chromium		0.30	ppm	
Lead		0.25	ppm	


QA/QC Initial



CHAIN OF CUSTODY RECORD

Mississippi Department of Environmental Quality
Office of Pollution Control Laboratory
1542 Old Whitfield Road
Pearl, MS 39208
Phone (601) 961-5701 Fax (601) 961-5704



Project: <u>TCLP Comparison</u>						Ship To: <input type="checkbox"/> Pearl Laboratory <u>MS State Chem Lab</u> <input checked="" type="checkbox"/> OTHER <u>Banner Analytical</u>						
Location: NRO / CRO / SRO / Other <u>LAB</u> (Circle one)												
Sample Matrix:						Samplers (Sign)						
1. Surface water 5. Sediment 9. Potable water 2. Ground water 6. Soil 10. Sludge 3. Wastewater 7. Fish tissue 11. Unsorted Benthic sample 4. Filtered chlorophyll-a 8. Leachate 12. Other <u>TCLP Extract</u>						A. <u>Erica Scarbrough</u> C. _____ B. _____ D. _____						
enSPIRE # / Site # (Print N/A if neither is known)	Date 20 <u>14</u>	Time (24 hr)	Sample matrix	Station Location/Description	Total # of Containers	Preservative						Lab Use Only:
						HCl	NaOH	HNO ₃	H ₂ SO ₄	Na ₂ S ₂ O ₃	None	
62146	6/26	1350	12	EPA 200.8 (Cr, Cd, Pb)	1			X				140630012-001
62150	6/26	1350	12	"	1			X				140630012-002
62151	6/26	1350	12	"	1			X				003
62152	6/26	1350	12	"	1			X				004
62153	6/26	1350	12	"	1			X				005
62154	6/26	1350	12	"	1			X				006
62155	6/26	1350	12	"	1			X				007
62156	6/26	1350	12	"	1			X				008
62157	6/26	1350	12	"	1			X				009
62158	6/26	1350	12	"	1			X				010
Relinquished By:		Date/Time	Received By:		Date/Time	Relinquished By:		Date/Time	Received By:			
(print) William E. Smith		6/30/14	(print) B. Thomas		6-30-14	(print) B. Thomas		12 pm	(print)			
(sign)		11:45 am	(sign)			(sign)			(sign)			
Relinquished By:		Date/Time	Received By:		Date/Time	Relinquished By:		Date/Time	Received By:			
(print)		6/30/14	(print) B. Thomas			(print)			(print)			
(sign)		12:00 pm	(sign) B. Thomas			(sign)			(sign)			

Notice: Must use a separate form for each ice chest.

Copy DISTRIBUTION: Original-Project Manager, Copy 1-QA Manager, Copy 2-Collector/Sampler

Page

1 of 1

Transport container: Ice _____ Dry Ice _____ None X

Final destination ice chest temp (°C) _____

Ver.022614

QC Tune Report

Data File: C:\ICPMH\1\7500\QCTUNE.D
Date Acquired: 16 Jun 2014 01:45:50 pm
Operator:
Misc Info:
Vial Number: 1307
Current Method: C:\ICPMH\1\METHODS\2008TUNE.m

Minimum Response (CPS)

Element	Actual	Required	Flag
---------	--------	----------	------

RSD (%)

Element	Actual	Required	Flag
---------	--------	----------	------

9 Be	2.16	5.00	
24 Mg	1.87	5.00	
25 Mg	1.86	5.00	
26 Mg	1.34	5.00	
59 Co	1.94	5.00	
115 In	0.97	5.00	
206 Pb	2.51	5.00	
207 Pb	1.89	5.00	
208 Pb	1.55	5.00	

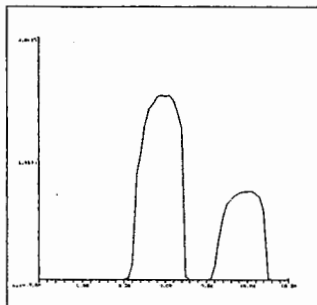
Ion Ratio

Element	Actual	Required	Flag
---------	--------	----------	------

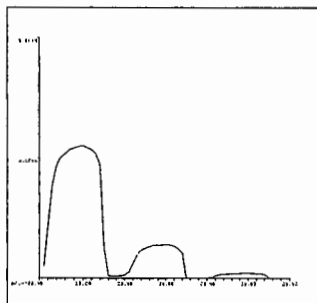
Maximum Bkg. Count (CPS)

Element	Actual	Required	Flag
---------	--------	----------	------

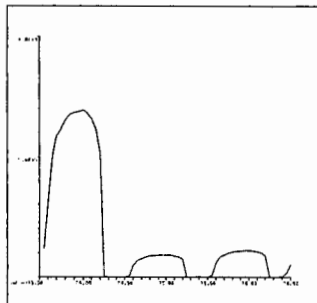
C:\ICPMH\1\DATA\061614CC.B\QCTUNE00.D



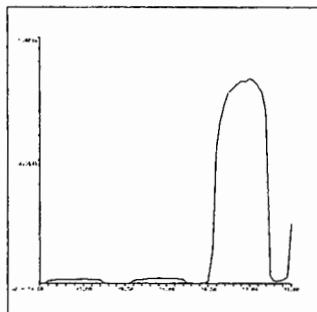
9 Be
Mass Calib.
Actual: 9.00
Required: 8.90-9.10
Flag:
Peak Width
Actual: 0.55
Required: 0.90
Flag:



24 Mg
Mass Calib.
Actual: 23.95
Required: 23.90-24.10
Flag:
Peak Width
Actual: 0.60
Required: 0.90
Flag:

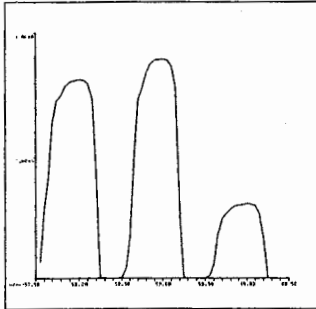


25 Mg
Mass Calib.
Actual: 24.95
Required: 24.90-25.10
Flag:
Peak Width
Actual: 0.60
Required: 0.90
Flag:



26 Mg
Mass Calib.
Actual: 25.95
Required: 25.90-26.10
Flag:
Peak Width
Actual: 0.60
Required: 0.90
Flag:

C:\ICPMH\1\DATA\061614CC.B\QCTUNE00.D



59 Co

Mass Calib.

Actual: 58.95

Required: 58.90-59.10

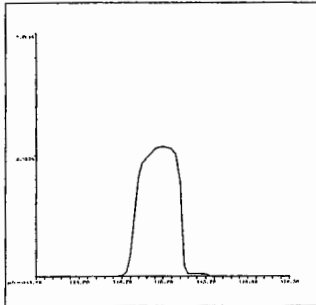
Flag:

Peak Width

Actual: 0.60

Required: 0.90

Flag:



115 In

Mass Calib.

Actual: 115.00

Required: 114.90-115.10

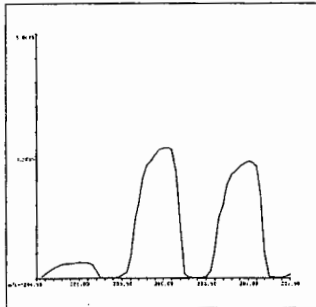
Flag:

Peak Width

Actual: 0.60

Required: 0.90

Flag:



206 Pb

Mass Calib.

Actual: 206.00

Required: 205.90-206.10

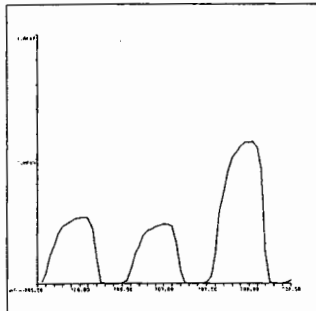
Flag:

Peak Width

Actual: 0.60

Required: 0.90

Flag:



207 Pb

Mass Calib.

Actual: 207.00

Required: 206.90-207.10

Flag:

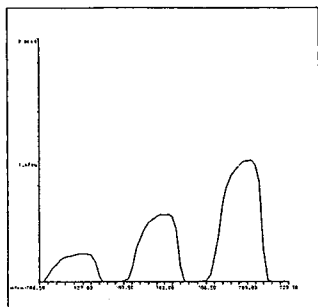
Peak Width

Actual: 0.60

Required: 0.90

Flag:

C:\ICPMH\1\DATA\061614CC.B\QCTUNE00.D



208 Pb

Mass Calib.

Actual: 208.00

Required: 207.90-208.10

Flag:

Peak Width

Actual: 0.60

Required: 0.90

Flag:

QC Tune Result:Pass

C:\ICPMH\1\DATA\061614CC.B\QCTUNE00.D

Replicated Data:		Tune #1			
Mass	Count (CPS)				
8	80.00	58.00	66.50	70.50	76.50
9	79983.85	81925.68	82847.37	83843.51	83821.08
10	38389.20	39328.22	40427.10	40271.23	41137.11
23	1592474.00	1634714.00	1629995.00	1661827.00	1653680.00
24	389966.81	396021.09	402919.50	404006.19	403303.91
25	52473.17	53750.00	54481.70	54907.97	54754.92
26	66794.83	67943.45	69093.26	68809.60	69601.28
27	2529292.00	2588327.00	2624655.00	2613141.00	2638889.00
58	436720.59	440655.91	445113.41	448764.59	451457.09
59	463039.69	473294.81	477857.50	477897.50	478810.41
60	163869.70	165263.20	168032.41	169761.91	169729.20
114	1286.34	1323.90	1364.95	1304.36	1275.88
115	1440742.00	1473642.00	1490436.00	1481238.00	1495165.00
116	1485.67	1494.68	1551.69	1646.21	1615.21
205	17834.41	17938.77	16908.56	15353.43	14376.97
206	127251.20	131172.41	133927.59	134506.41	134910.00
207	114431.40	117193.40	119594.30	119616.50	119934.60
208	274807.31	281794.81	286339.81	286753.59	287141.81
209	487627.59	496920.41	501780.00	504123.59	504145.69

Calibration Blank Report

Sample Name Blank
Data File Name 002CALB.D
DataPath C:\ICPMH\1\DATA\061614CC.B
Acq Date Time 2014-06-16T13:53:34-04:00
Type CalBlk
VialNumber 1101
Dilution 1
Comment
Operator

QC Analyte Table

Element	m/z	ISTD	Tune Step	CPS	%RSD
Be	9	45	1	390	16.01
Na	23	45	1	1227592	2.06
Mg	24	45	1	35860	2.24
Al	27	45	1	467932	2.82
Ca	44	45	1	434950	3.10
Ti	47	45	1	1001	12.40
V	51	45	1	5349	3.11
Cr (V)	52	45	1	22238	2.37
Mn	55	45	1	22525	3.60
Fe	57	45	1	125811	1.17
Co	59	89	1	3234	9.56
Ni	60	89	1	256382	1.20
Cu	63	89	1	8793	6.08
Zn	66	89	1	26047	11.99
(As)	77	115	1	2674	3.19
Se	82	115	1	653	9.04
(As)	83	115	1	621	6.23
Mo	98	115	1	16826	12.21
(Cd)	106	115	1	2267	7.60
Ag	107	115	1	173	28.46
(Cd)	108	115	1	277	19.91
Cd	111	115	1	1612	11.20
Sn	118	115	1	1060	24.07
Sb	121	159	1	2400	8.97
Ba	137	159	1	530	15.09
Tl	205	209	1	10167	7.08
(Pb)	206	209	1	3684	22.55
(Pb)	207	209	1	2850	14.50
Pb	208	209	1	13970	9.74

QC ISTD Table

Element	m/z	Tune Step	CPS	%RSD
Sc	45	1	1113833	4.56
Y	89	1	1550362	0.30
In	115	1	1421343	1.57
Tb	159	1	1818278	1.41
Bi	209	1	994914	0.95

TuneStep	TuneFile
1	nogas.u

Calibration Blank Report

Sample Name Blank
Data File Name 003CALB.D
DataPath C:\ICPMH\1\DATA\061614CC.B
Acq Date Time 2014-06-16T13:58:27-04:00
Type CalBlk
VialNumber 1101
Dilution 1
Comment
Operator

QC Analyte Table

Element	m/z	ISTD	Tune Step	CPS	%RSD
Be	9	45	1	340	13.48
Na	23	45	1	1230036	3.30
Mg	24	45	1	35754	3.31
Al	27	45	1	457889	3.76
Ca	44	45	1	429548	2.24
Ti	47	45	1	1029	9.85
V	51	45	1	5445	14.66
Cr (V)	52	45	1	22699	1.14
Mn	55	45	1	21771	0.83
Fe	57	45	1	127490	0.98
Co	59	89	1	2870	9.92
Ni	60	89	1	248071	0.86
Cu	63	89	1	8579	10.36
Zn	66	89	1	18891	16.33
(As)	77	115	1	2883	1.35
Se	82	115	1	648	2.94
(As)	83	115	1	574	7.71
Mo	98	115	1	12453	17.42
(Cd)	106	115	1	2417	4.46
Ag	107	115	1	213	16.46
(Cd)	108	115	1	213	35.18
Cd	111	115	1	1778	11.65
Sn	118	115	1	1030	22.89
Sb	121	159	1	2584	17.98
Ba	137	159	1	540	21.36
Tl	205	209	1	7329	11.70
(Pb)	206	209	1	3674	13.67
(Pb)	207	209	1	2867	8.18
Pb	208	209	1	14260	8.84

QC ISTD Table

Element	m/z	Tune Step	CPS	%RSD
Sc	45	1	1059675	2.60
Y	89	1	1524489	2.42
In	115	1	1379968	2.33
Tb	159	1	1760231	2.68
Bi	209	1	963543	2.51

TuneStep	TuneFile
1	nogas.u

Calibration Blank Report

Sample Name Blank
Data File Name 004CALB.D
DataPath C:\ICPMH\1\DATA\061614CC.B
Acq Date Time 2014-06-16T14:03:18-04:00
Type CalBlk
VialNumber 1101
Dilution 1
Comment
Operator

QC Analyte Table

Element	m/z	ISTD	Tune Step	CPS	%RSD
Be	9	45	1	300	6.67
Na	23	45	1	1229124	1.09
Mg	24	45	1	36972	4.50
Al	27	45	1	454623	4.10
Ca	44	45	1	421927	3.00
Ti	47	45	1	961	5.31
V	51	45	1	5770	7.68
Cr (V)	52	45	1	23239	1.44
Mn	55	45	1	20833	2.81
Fe	57	45	1	129037	0.89
Co	59	89	1	2557	10.73
Ni	60	89	1	236304	1.87
Cu	63	89	1	9116	7.31
Zn	66	89	1	23637	18.23
(As)	77	115	1	2932	2.64
Se	82	115	1	669	3.65
(As)	83	115	1	611	9.72
Mo	98	115	1	10113	14.07
(Cd)	106	115	1	2100	10.00
Ag	107	115	1	197	33.08
(Cd)	108	115	1	187	15.46
Cd	111	115	1	1494	7.95
Sn	118	115	1	877	20.09
Sb	121	159	1	2387	9.97
Ba	137	159	1	437	15.25
Tl	205	209	1	6305	9.57
(Pb)	206	209	1	3591	10.38
(Pb)	207	209	1	2854	9.48
Pb	208	209	1	13836	7.04

QC ISTD Table

Element	m/z	Tune Step	CPS	%RSD
Sc	45	1	1050744	6.89
Y	89	1	1455347	3.58
In	115	1	1304115	3.87
Tb	159	1	1700346	2.17
Bi	209	1	929407	3.14

TuneStep	TuneFile
1	nogas.u

Calibration Standard Report

Sample Name 1/0.1ppb
Data File Name 005CAL.S.D
DataPath C:\ICPMH\1\DATA\061614CC.B
Acq Date Time 2014-06-16T14:08:11-04:00
Type CalStd
VialNumber 1102
Dilution 1
Comment
Operator
ISTDRefDataFileName 004CALB.D
ISTD PassFail Pass

QC Analyte Table

Element	m/z	ISTD	Tune Step	CPS	%RSD
Be	9	45	1	9630	15.29
Na	23	45	1	1396792	5.72
Mg	24	45	1	81379	9.28
Al	27	45	1	407287	4.98
Ca	44	45	1	415875	4.50
Ti	47	45	1	5201	11.85
V	51	45	1	65809	12.71
Cr (V)	52	45	1	78447	10.68
Mn	55	45	1	94449	9.65
Fe	57	45	1	129343	0.24
Co	59	89	1	60969	11.52
Ni	60	89	1	236523	0.82
Cu	63	89	1	40612	10.26
Zn	66	89	1	89807	49.00
As	75	115	1	7522	15.09
(As)	77	115	1	3580	4.58
Se	82	115	1	1228	8.75
(As)	83	115	1	601	8.82
Mo	98	115	1	30424	12.51
(Cd)	106	115	1	3234	13.18
Ag	107	115	1	670	14.39
(Cd)	108	115	1	617	14.63
Cd	111	115	1	10151	13.29
Sn	118	115	1	21779	11.41
Sb	121	159	1	31157	11.83
Ba	137	159	1	9210	9.37
Tl	205	209	1	58241	10.64
(Pb)	206	209	1	19196	11.16
(Pb)	207	209	1	16867	14.51
Pb	208	209	1	77533	12.08

QC ISTD Table

Element	m/z	Tune Step	CPS	%RSD	Reference CPS	%Recovery	Lower Limit	Upper Limit	QC Flag
Sc	45	1	1036705	6.11	1050744	98.7	60	125	
Y	89	1	1438274	2.39	145557	98.8	60	125	
In	115	1	1273408	4.80	1304115	97.6	60	125	
Tb	159	1	1684111	1.32	1700346	99.0	60	125	
Bi	209	1	915225	2.64	929407	98.5	60	125	

TuneStep	TuneFile
1	nogas.u

Calibration Standard Report

Sample Name 10/1ppb
Data File Name 006CAL.S.D
DataPath C:\ICPMH\1\DATA\061614CC.B
Acq Date Time 2014-06-16T14:13:04-04:00
Type CalStd
VialNumber 1103
Dilution 1
Comment
Operator
ISTDRefDataFileName 004CALB.D
ISTD PassFail Pass

QC Analyte Table

Element	m/z	ISTD	Tune Step	CPS	%RSD
Be	9	45	1	97035	0.54
Na	23	45	1	1765692	3.30
Mg	24	45	1	380669	2.50
Al	27	45	1	781643	2.54
Ca	44	45	1	425163	3.40
Ti	47	45	1	44167	2.89
V	51	45	1	603809	2.58
Cr (V)	52	45	1	576603	1.68
Mn	55	45	1	737352	2.04
Fe	57	45	1	142880	1.93
Co	59	89	1	609944	2.56
Ni	60	89	1	355642	1.00
Cu	63	89	1	322886	3.12
Zn	66	89	1	132535	1.03
As	75	115	1	86664	2.36
(As)	77	115	1	7332	1.31
Se	82	115	1	6265	1.27
(As)	83	115	1	580	1.79
Mo	98	115	1	216485	3.84
(Cd)	106	115	1	9650	2.83
Ag	107	115	1	13606	12.74
(Cd)	108	115	1	5671	4.37
Cd	111	115	1	83248	3.55
Sn	118	115	1	208834	3.48
Sb	121	159	1	298506	2.88
Ba	137	159	1	92531	2.53
Tl	205	209	1	525759	2.09
(Pb)	206	209	1	180564	1.19
(Pb)	207	209	1	160540	2.49
Pb	208	209	1	731518	1.90

QC ISTD Table

Element	m/z	Tune Step	CPS	%RSD	Reference CPS	%Recovery	Lower Limit	Upper Limit	QC Flag
Sc	45	1	1002337	4.70	1050744	95.4	60	125	
Y	89	1	1431222	4.44	1455347	98.3	60	125	
In	115	1	1264091	5.50	1304115	96.9	60	125	
Tb	159	1	1652250	3.72	1700346	97.2	60	125	
Bi	209	1	899040	3.92	929407	96.7	60	125	

TuneStep	TuneFile
1	nogas.u

Calibration Standard Report

Sample Name 100/10ppb
Data File Name 007CALS.D
DataPath C:\ICPMH\1\DATA\061614CC.B
Acq Date Time 2014-06-16T14:17:57-04:00
Type CalStd
VialNumber 1104
Dilution 1
Comment
Operator
ISTDRefDataFileName 004CALB.D
ISTD PassFail Pass

QC Analyte Table

Element	m/z	ISTD	Tune Step	CPS	%RSD
Be	9	45	1	1124618	1.96
Na	23	45	1	6969756	1.79
Mg	24	45	1	3983012	0.79
Al	27	45	1	4935455	2.17
Ca	44	45	1	604410	1.95
Tl	47	45	1	467283	1.69
V	51	45	1	6732727	2.03
Cr (V)	52	45	1	6295475	1.76
Mn	55	45	1	7993326	1.66
Fe	57	45	1	291439	1.42
Co	59	89	1	6776676	1.65
Ni	60	89	1	1800123	1.54
Cu	63	89	1	3615239	0.99
Zn	66	89	1	1015557	0.67
As	75	115	1	955528	1.60
(As)	77	115	1	52299	1.59
Se	82	115	1	64501	1.20
(As)	83	115	1	623	9.54
Mo	98	115	1	2381890	0.52
(Cd)	106	115	1	82513	2.93
Ag	107	115	1	306435	6.45
(Cd)	108	115	1	60698	2.31
Cd	111	115	1	884442	1.33
Sn	118	115	1	2361586	0.81
Sb	121	159	1	3343464	0.41
Ba	137	159	1	1005050	1.81
Tl	205	209	1	5962923	1.53
(Pb)	206	209	1	2110427	2.35
(Pb)	207	209	1	1819590	1.60
Pb	208	209	1	8260736	1.83

QC ISTD Table

Element	m/z	Tune Step	CPS	%RSD	Reference CPS	%Recovery	Lower Limit	Upper Limit	QC Flag
Sc	45	1	1001266	8.16	1050744	95.3	60	125	
Y	89	1	1455347	10.77	1455347	97.3	60	125	
In	115	1	1272680	8.58	1304115	97.6	60	125	
Tb	159	1	1656083	8.40	1700346	97.4	60	125	
Bi	209	1	878857	7.98	929407	94.6	60	125	

TuneStep	TuneFile
1	nogas.u

Calibration Standard Report

Sample Name 500/50ppb
Data File Name 008CAL.S.D
DataPath C:\ICPMH\1\DATA\061614CC.B
Acq Date Time 2014-06-16T14:22:46-04:00
Type CalStd
VialNumber 1105
Dilution 1
Comment
Operator
ISTDRefDataFileName 004CALB.D
ISTD PassFail Pass

QC Analyte Table

Element	m/z	ISTD	Tune Step	CPS	%RSD
Be	9	45	1	4941477	1.40
Na	23	45	1	27106469	2.34
Mg	24	45	1	17611915	2.22
Al	27	45	1	21086441	2.38
Ca	44	45	1	1517853	0.28
Ti	47	45	1	2244498	2.26
V	51	45	1	29494798	1.38
Cr (V)	52	45	1	28171185	1.60
Mn	55	45	1	35894838	2.11
Fe	57	45	1	866360	1.13
Co	59	89	1	30731280	2.32
Ni	60	89	1	7184269	2.43
Cu	63	89	1	15767024	2.28
Zn	66	89	1	4725338	1.77
As	75	115	1	4513868	2.66
(As)	77	115	1	224623	2.04
Se	82	115	1	295040	2.73
(As)	83	115	1	837	8.11
Mo	98	115	1	10777938	1.67
(Cd)	106	115	1	371955	1.84
Ag	107	115	1	1760063	2.85
(Cd)	108	115	1	276720	1.54
Cd	111	115	1	4163268	1.49
Sn	118	115	1	10707224	2.55
Sb	121	159	1	15351163	2.51
Ba	137	159	1	4807182	2.23
Tl	205	209	1	27210511	2.36
(Pb)	206	209	1	9294416	2.98
(Pb)	207	209	1	8043622	2.69
Pb	208	209	1	36722616	2.71

QC ISTD Table

Element	m/z	Tune Step	CPS	%RSD	Reference CPS	%Recovery	Lower Limit	Upper Limit	QC Flag
Sc	45	1	992445	1.70	1050744	94.5	60	125	
Y	89	1	1409618	2.81	1455347	96.9	60	125	
In	115	1	1269147	0.97	1304115	97.3	60	125	
Tb	159	1	1642747	0.68	1700346	96.6	60	125	
Bi	209	1	866440	1.99	929407	93.2	60	125	

TuneStep	TuneFile
1	nogas.u

Calibration Standard Report

Sample Name 1000/100ppm
Data File Name 009CAL.S.D
DataPath C:\ICPMH\1\DATA\061614CC.B
Acq Date Time 2014-06-16T14:27:28-04:00
Type CalStd
VialNumber 1106
Dilution 1
Comment
Operator
ISTDRefDataFileName 004CALB.D
ISTD PassFail Pass

QC Analyte Table

Element	m/z	ISTD	Tune Step	CPS	%RSD
Be	9	45	1	9905293	2.80
Na	23	45	1	53390736	0.98
Mg	24	45	1	35334196	1.44
Al	27	45	1	42495391	0.82
Ca	44	45	1	2521697	1.22
Ti	47	45	1	4449772	1.94
V	51	45	1	59878328	2.41
Cr (V)	52	45	1	56322086	1.09
Mn	55	45	1	72039774	2.08
Fe	57	45	1	1633360	2.46
Co	59	89	1	61044099	2.16
Ni	60	89	1	14149056	2.35
Cu	63	89	1	31545032	1.53
Zn	66	89	1	9411010	1.41
As	75	115	1	9017485	1.56
(As)	77	115	1	451555	2.13
Se	82	115	1	592535	2.56
(As)	83	115	1	932	4.23
Mo	98	115	1	21607134	1.44
(Cd)	106	115	1	742661	1.15
Ag	107	115	1	3609336	2.77
(Cd)	108	115	1	553947	1.90
Cd	111	115	1	8355262	1.76
Sn	118	115	1	21536316	1.40
Sb	121	159	1	30869151	2.87
Ba	137	159	1	9640410	1.66
Tl	205	209	1	54462366	3.14
(Pb)	206	209	1	18575976	2.05
(Pb)	207	209	1	16085226	1.97
Pb	208	209	1	73861643	1.91

QC ISTD Table

Element	m/z	Tune Step	CPS	%RSD	Reference CPS	%Recovery	Lower Limit	Upper Limit	QC Flag
Sc	45	1	1003507	1.39	1050744	95.5	60	125	
Y	89	1	1431790	2.39	1455347	98.4	60	125	
In	115	1	1253627	2.20	1304115	96.1	60	125	
Tb	159	1	1684891	1.49	1700346	99.1	60	125	
Bi	209	1	866572	2.00	929407	93.2	60	125	

TuneStep	TuneFile
1	nogas.u